

APPENDIX C

GEOSYNTEC'S WELL INSTALLATION
AND GEOPHYSICAL SURVEY RPEORT
DATED JULY 28, 2004,
AND GEOSYNTEC'S GEOPHYSICAL
INVESTIGATION REPORT
DATED FEBRUARY 15, 2006

**WELL INSTALLATION AND GEOPHYSICAL
SURVEY REPORT
ASCON LANDFILL SITE
HUNTINGTON BEACH, CALIFORNIA**

Submitted To:
California Department of Toxic Substances Control

Prepared for:
Ascon Site Responsible Parties
Atlantic Richfield Company; Chevron U.S.A. Inc. and Texaco Inc., Conoco Phillips
Inc., The Dow Chemical Company, Shell Oil Company, Southern California Edison
Company, and TRW Inc.
and
Exxon Mobil Corporation

Prepared by:



GeoSyntec Consultants
2100 Main Street, Suite 150
Huntington Beach, California 92648
(714) 969-0800

July 28, 2004



July 28, 2004

Mr. Thomas M. Cota, Chief
Southern California Cleanup Operations Branch – Cypress Office
Attention: Ms. Christine Chiu, Project Manager
Southern California Cleanup Operations Branch, Cypress
Department of Toxic Substance Control
5796 Corporate Avenue
Cypress, California 90630-4732

RE: Well Installation and Geophysical Investigation Letter Report
Groundwater RI/FS Activities
Ascon Landfill Site
Huntington Beach, California

Dear Ms. Chiu:

1.0 INTRODUCTION

This letter report presents a summary of the monitoring well installation and geophysical investigation activities conducted at the Ascon Landfill Site (site) in February and March, 2004. The work was conducted in general accordance with the Groundwater Remedial Investigation/Feasibility Study (RI/FS) Workplan-Revision 1.0 dated October 24, 2003. The workplan was conditionally approved by DTSC in their letter dated February 3, 2004. The work was conducted as part of the Groundwater RI/FS outlined in the Consent Order, Docket No. I&SE-CO 02/03-007, dated January 8, 2003.

This letter report has been organized as follows.

- Section 1.0 – “Introduction”
- Section 2.0 – “Geophysical Investigation and Survey Results”
- Section 3.0 – “Monitoring Well Installation and Well Development Results”
- Section 4.0 – “Summary and Recommendations”



2.0 GEOPHYSICAL INVESTIGATION AND SURVEY RESULTS

A geophysical investigation was conducted to attempt to find three monitoring wells (AW-1, AW-6 and AW-7) which had not been successfully located during recent monitoring events. The intent of the survey was to identify anomalies that could be buried steel well casings.

Based on previous site well location maps, AW-1 was believed to be located in the southeastern portion of the site, and AW-6 and AW-7 were believed to be located north of the site along Hamilton Avenue. The general areas of the three missing wells were first approximated using a map prepared by Ecology Services and Environment (ESE) (1983) and by reported well coordinates for the wells obtained from the Project Navigator Ltd. (PNL) database (PNL, personal communication). Nunez Engineering surveyed in the reported well coordinates for AW-1, AW-6 and AW-7 on February 3, 2004 (see February 3rd surveyors report in Attachment A). The reported well coordinates and ESE's mapped locations for AW-6 and AW-7 agreed fairly well; however for AW-1 the two locations agreed very poorly because the reported coordinates for AW-1 were in error.

To establish grid patterns to guide the surveys, approximate 100-foot by 100-foot zones were marked out in the general areas of each of the surveyed and mapped locations of AW-6 and AW-7. An approximate 135-foot by 60-foot area was marked out in the area where the ESE map showed AW-1 to be located. These approximate marked areas are shown on Figure 2.

A 5-foot grid was set up in the marked areas and the gridlines were traversed with a portable proton precession magnetometer operated by Spectrum Geophysics of San Fernando, California on February 13, 2004. During the survey, in the AW-6 and AW-7 areas, Spectrum Geophysics identified two anomalies that appeared to be localized and which are interpreted to be possible buried steel well casings. The locations of the anomalies are shown on Figure 2 as locations A1 and A2. Anomaly A1 is located near the reported location of AW-7 and A2 is located near the reported location of AW-6. Both anomalies (A1 and A2) are located under Hamilton Avenue. No anomalies interpreted to be steel well casings were reported in the area near the reported location of

AW-1. However, AW-1 was subsequently located during cleanup operations conducted in March 2004 following the Krik Well-80 incident.

Daily field sheets and the Spectrum Geophysics Project Memo are presented in Attachment B. The locations of anomalies A1 and A2 were surveyed by Nunez Engineering on April 26, 2004 (see April 26th surveyors report in Attachment A).

As part of the well surveying conducted on February 3, 2004, Nunez Engineering resurveyed monitoring locations GP-5, GP-16, GP-20, GP-21, GP-23, GP-24, P-9, and P-10. The objective of resurveying GP-24 and P-9 was to check the vertical casing elevations. In the case of P-9, the elevation was suspect due to the anomalous contribution to potentiometric surface mapping observed. In the case of GP-24, the elevation was known to be incorrect because of a broken casing at the surface. The objective of resurveying the other monitoring locations was to verify the lateral positions (northings and eastings) of the locations. The new locations of these monitoring wells are plotted on Figure 2. The new casing elevations (GP-24 and P-9) and locations were incorporated into the First Quarter 2004 Groundwater Monitoring Report (June 4, 2004) and will be used in subsequent reporting.

3.0 WELL INSTALLATION AND WELL DEVELOPMENT RESULTS

Five groundwater monitoring wells (AW-1A, AW-4A, B-4A, MW-19, and MW-20) were installed at the locations shown on Figure 2. Logging of the well boreholes and well installation was completed between February 23, 2004, and February 27, 2004. The objective of each of the monitoring wells is presented in Section 6.1.1 of the Groundwater RI/FS Workplan-Revision 1.0.

The groundwater drilling and well installation activities were completed using a CME 95 hollow-stem auger rig operated by West Hazmat of Anaheim, California. Monitoring well permits were obtained from Orange County and the City of Huntington Beach (see Attachment C). Drilling was completed using an 8-inch or 8 3/4-inch diameter hollow-stem auger (the first 41 feet of MW-20 was completed with a 15-inch auger in order to install a permanent 40-foot conductor casing). Lithologic samples were collected approximately every three feet and logged by a field geologist. The samples were also field screened with a photoionization detector (PID). Borehole logs with lithologic descriptions, field PID readings, drilling notes, and observations of waste and impacted soils are presented in Attachment D. Daily field sheets including calibration

logs for the PID and air monitoring results are presented in Attachment B. Soil cuttings produced during drilling were stored in DOT-approved 55-gallon drums.

Well construction information is summarized in Table 1 and in Well Construction Diagrams presented in Attachment D. The monitoring wells were constructed of 2-inch diameter schedule 40 PVC casing with 20-slot screen (0.020 machine-slotted casing). The four wells screened across the water table (AW-1A, AW-4A, B-4A and MW-19) were completed with 15 feet of screen. The wells were screened from approximately 5 feet above the groundwater surface to 10 feet below the groundwater surface. Well MW-20 was screened in the lower portion of the Semi-Perched Aquifer Zone between the depths of approximately 64 feet and 74 feet. The well annulus adjacent to the screen interval was filled with #2/12 sand, which extended from the bottom of the well to approximately 1-3 feet above the top of the screen interval (Table 1). An approximately 1 to 3 foot thick layer of bentonite pellets was placed above the sand filter pack and hydrated. The remainder of the annulus was filled with bentonite grout and pre-mixed concrete at the surface. The wells were completed at the surface with locking steel monuments or, in the case of MW-19, a steel traffic box.

Following well completion, the monitoring wells were developed by bailing, surging, and pumping with a well development rig operated by Gregg Drilling & Testing, Inc. of Signal Hill, California. The five monitoring wells were developed on March 3, 2004, and March 4, 2004. During development, pH, specific conductivity, turbidity, and temperature were monitored. Approximately 90 to 100 gallons of water (approximately 40 to 60 well volumes) were purged from each shallow well (AW-1A, AW-4A, B-4A, and MW-19). Approximately 170 gallons of water (approximately 20 well volumes) was purged from the deep monitoring well, MW-20. Daily field sheets are presented in Attachment B and well development logs are presented in Attachment E. Purge water was stored in DOT approved 55-gallon drums.

The vertical elevation (top of casing and ground elevation) and lateral coordinates of the new monitoring wells and the recently located monitoring well AW-1 were surveyed by Nunez Engineering on April 26, 2004. The survey report is presented in Attachment A.

4.0 SUMMARY AND RECOMENDATIONS

The results of the Well Installation and Geophysical Investigation are summarized below.

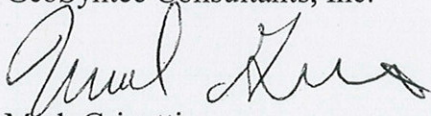
- In accordance with the Groundwater RI/FS Workplan, a geophysical magnetometer survey was conducted on February 13, 2004, to locate missing monitoring wells AW-1, AW-6, and AW-7. Two anomalies (A1 and A2 in Figure 2) located under Hamilton Street, north of the site boundary, were interpreted to be possible buried steel well casings. The anomalies may be the locations of AW-6 and AW-7. No anomaly, interpreted to be a possible buried steel well casing, was identified in the area near the reported location of AW-1. However, AW-1 was subsequently located during cleanup operations conducted in March 2004.
- Monitoring wells GP-24 and P-9 were resurveyed to check vertical elevations that were suspect, and numerous other wells were resurveyed to confirm lateral locations. The new locations were used to adjust the site well/piezometer location map presented in the quarterly monitoring reports.
- Five monitoring wells (AW-1A, AW-4A, B-4A, MW-19, and MW-20) were installed between February 23 and 27, 2004, in accordance with the Groundwater RI/FS workplan. The monitoring wells were developed on March 3 and 4, 2004.

At this time we recommend that the anomalies A1 and A2, identified during the Geophysical Investigation, be excavated and investigated during the remedial phase of the project. If monitoring wells are found we recommend that they be destroyed in accordance with California Well Standards.

If you have any questions regarding this letter report please call Tamara Zeier of Project Navigator at 714-388-1804 or tzeier@projectnavigator.com.

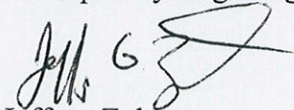
Sincerely,

GeoSyntec Consultants, Inc.



Mark Grivetti

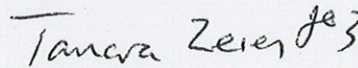
Principal Hydrogeologist, R.G., C.Hg.



Jeffrey Zukin

Senior Geologist, R.G., C.E.G.

Project Navigator, Ltd.



Tamara Zeier

Project Coordinator, P.E.

Attachments: Table 1
Figures 1-2
Attachments A-E

cc: Ascon Site Responsible Parties



Table 1
Well Construction Information
Ascon Landfill Site
Huntington Beach, California

Well ID	Water Level Depth (ft btoc) ¹	Approximate Well Depth (ft bgs)	Boring Diameter (in)	Well Casing Diameter (in)	Conductor Casing Depth (ft bgs) ⁴	Screen Interval Depth (ft bgs)	#2/12 Sand Filter Pack Interval Depth (ft bgs)	Bentonite Pellet Layer (ft bgs)	Seal Interval Depth ³ (ft bgs)
MW-19	5.28	19	8.75	2	-	4-19	3-19	1-3	0-3
MW-20	26.42	74	8 and 15 ²	2	41	64-74	61-74	57-61	0-61
AW-1A	12.51	20	8.75	2	-	5-20	4-20	2-4	0-4
AW-4A	8.90	18	8.75	2	-	3-18	2-18	1-2	0-2
B-4A	21.60	31	8.75	2	-	16-31	14-31	12-14	0-14

¹ Measured groundwater depth on March 15, 2004 from top of well casing.

² 15-inch auger used to install 10-inch permanent conductor casing to a depth of 41 feet.

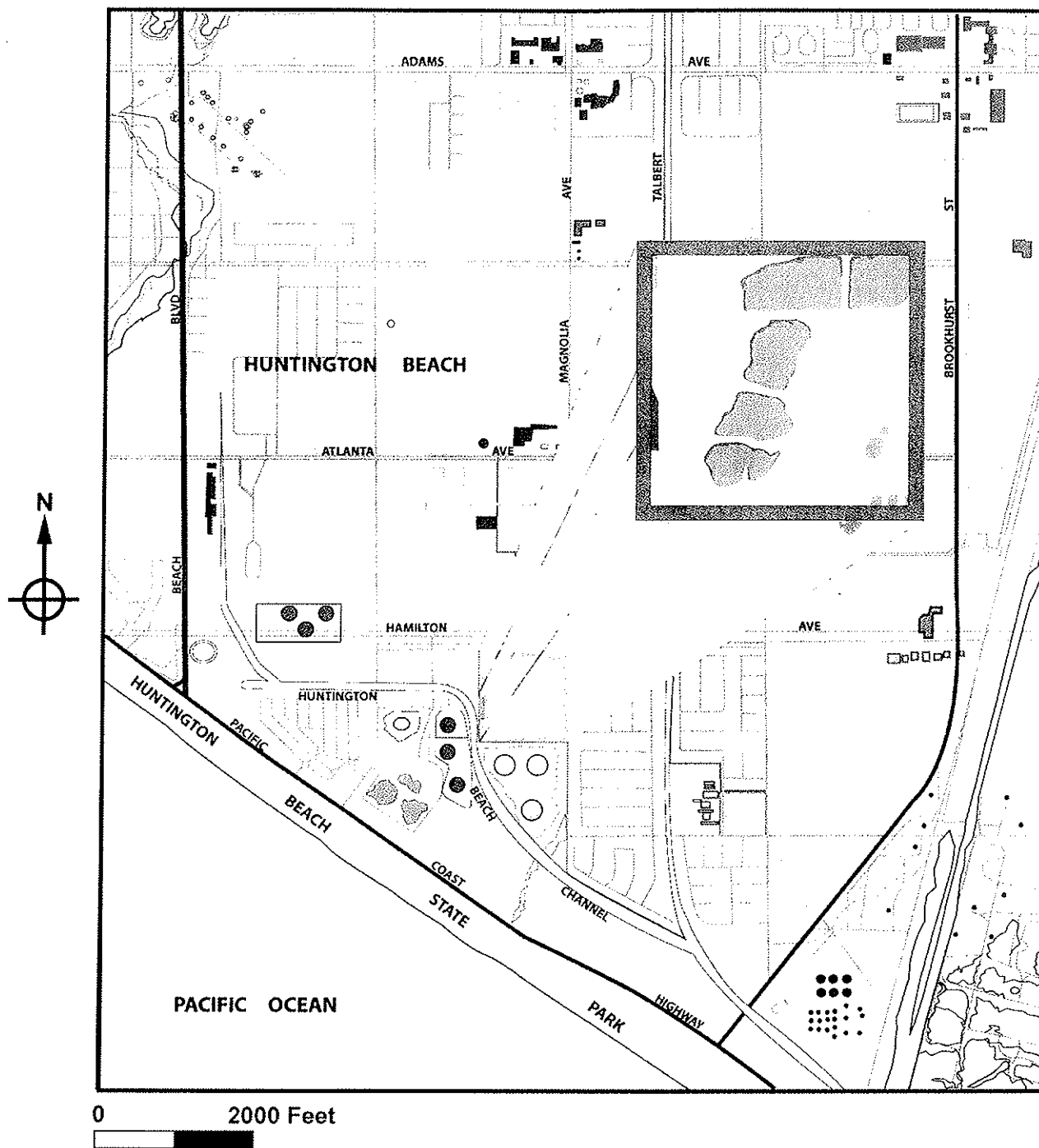
³ Seal interval includes bentonite pellet layer.

⁴ 8 5/8-inch diameter mild steel conductor casing

ft btoc: feet below top of casing

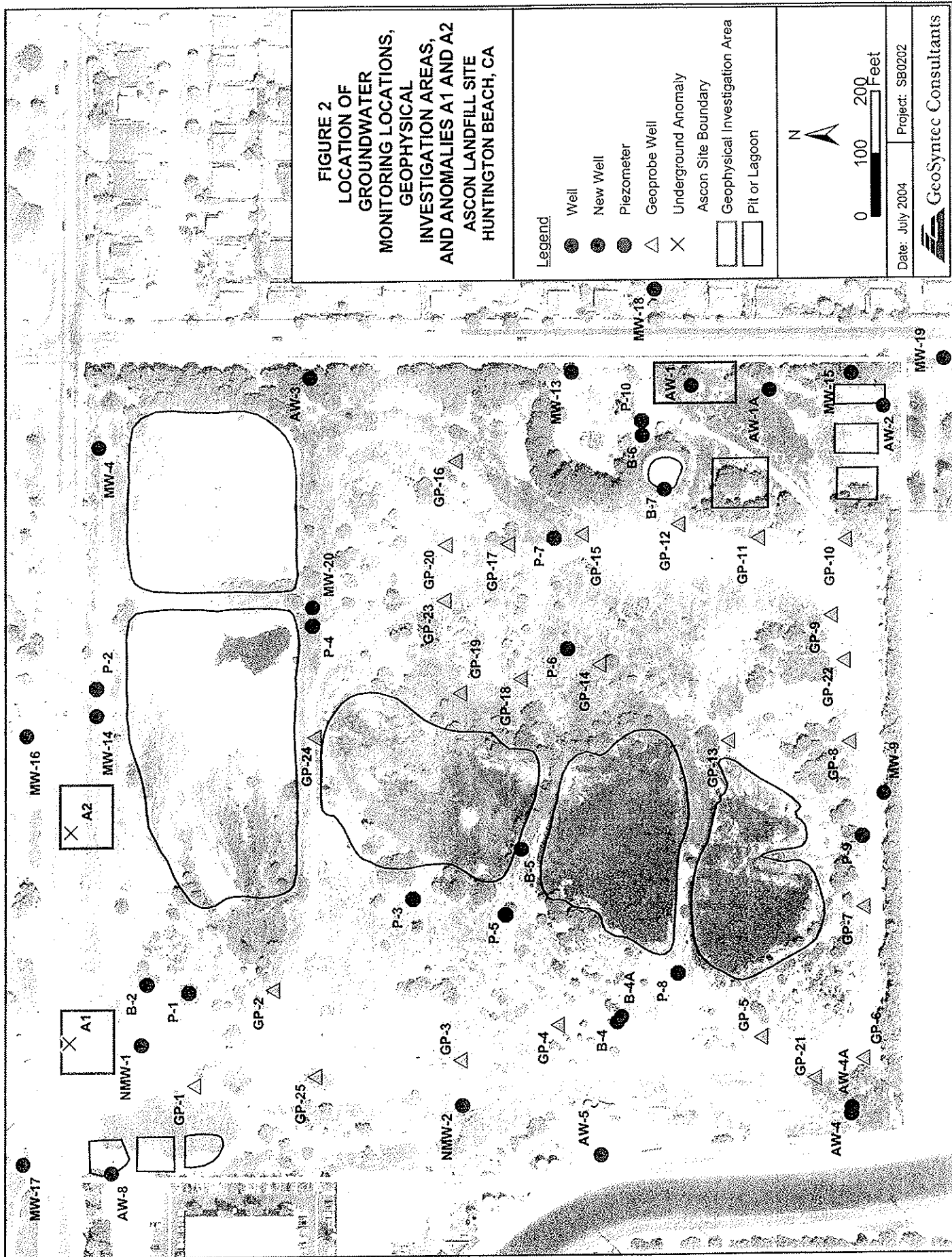
ft bgs: feet below ground surface

in: inches



Site Location Map

Figure 1



ATTACHMENT A
SURVEY RESULTS

SURVEY SHEET

PROJECT NAME ASCON LANDFILL SITE, HUNTINGTON BEACH

CONTRACTOR : C/O TAMARA ZEIER (PROJECT NAVIGATOR, LTD)

IMPROVEMENT: WELL LOCATIONS

CHECKED BY SWA-FPN DATE: 2/03/04

NUNEZ ENGINEERING
6509 PAINTER AVENUE
WHITTIER, CA. 90601
PHONE (562) 945-8945
FAX (562) 945-1705
nunez.eng@verizon.net

[illegible]

BENCHMARK USED:

DESCRIPTION

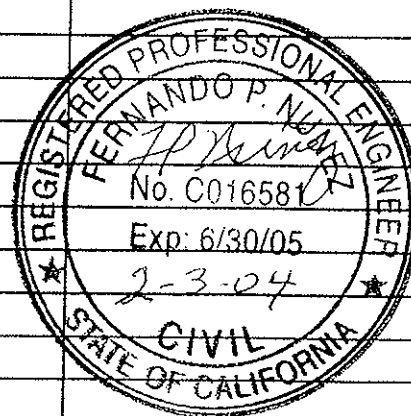
DESIGNATION

1G-151-74

A 3-3/4" OCS ALUMINUM BENCHMARK DISK STAMPED "1G-151-74" MON. IS LOCATED IN THE N.W. COR. OF HAMILTON AVE. & MAGNOLIA ST., 57 FT. WESTERLY OF THE CENTERLINE OF MAGNOLIA ST. AND 81.30 FT. NORTHERLY OF THE CENTERLINE OF HAMILTON AVE., 1 FT. EASTERLY OF THE SIDEWALK. MON. IS DOWN 0.5 FT. BELOW SIDEWALK SURFACE.

NAVD 88 HEIGHT (FT.)

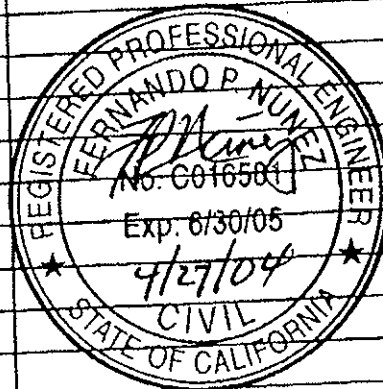
5.609



SURVEY SHEET

PROJECT NAME : ASCON SITE (MAGNOLIA/HAMILTON)
CONTRACTOR : C/O LAURA MORALES (GEOSYNTEC)
IMPROVEMENT: WELL LOCATIONS
CHECKED BY : SWA/FPN DATE: 4-26-04

NUNEZ ENGINEERING
6509 PAINTER AVENUE
WHITTIER, CA. 90601
PHONE (562) 945-8945
FAX (562) 945-1705
nunez.eng@verizon.net

[illegible]

BENCHMARK NOTE:

NAVD 88
HEIGHT (FT.)

5,609

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DESIGNATION	DESCRIPTION
1G-151-74	A 3-3/4" Ø OCS ALUMINUM BENCHMARK DISK STAMPED "1G-151-74" MON. IS LOCATED IN THE N.W. COR. OF HAMILTON AVE. & MAGNOLIA ST. 57 FT. WESTERLY OF THE CENTERLINE OF MAGNOLIA ST. & 81.30 FT. NORTHERLY OF THE CENTERLINE OF HAMILTON AVE., 1 FT. EASTERLY OF THE SIDEWALK. MON. IS DOWN 0.5 FT. BELOW SIDEWALK SURFACE.

ATTACHMENT B
DAILY FIELD SHEETS



GEOSYNTEC CONSULTANTS

924 Anacapa Street, Suite 4A

Santa Barbara, California 93101

805-897-3800 (phone) 805-899-8689 (fax)

DAILY FIELD REPORT

PROJECT: Ascon R/F/S

LOCATION: Huntington Beach

PROJECT NO.: SB0202 TASK NO.: 20

DESCRIPTION: Locating Wells - Making Boring Locations DATE: 10 day February month 2004 year

CONTRACTOR(S): NA

WEATHER, TEMPERATURE: Sunny/Warm

Time	Event
11:30	Arrive onsite. The keys I have do not open gate. I Go around site to recon and see new boring locations and where missing well areas are.
12:30	I call HB office to get a copy of keys to site. none of the key holders are there (lunch)
13:15	I pick up keys from HB office
13:40	I return to site. - Mark locations for MW-19, MW-20, B4A and AW-4A.
	MW-20 had plenty of room for a rig - Photographed location
	MW-AW-4A - had room for rig to back in though the ground is uneven at boring location. Should be able to level with Rig's hydraulic lifts. Took photo.
	B-4A There was a large bush impeding access to desired location for boring. I used the B4 well as a "compass" and rotated location 5 feet to south. Took photo.
	MW-19 location is actually in street at the side i.e. in parking lane. Should Be easily accessed.

NAME: L. Morales

PROJECT NO.: SB0202 HOURS: _____



GEO SYNTEC CONSULTANTS

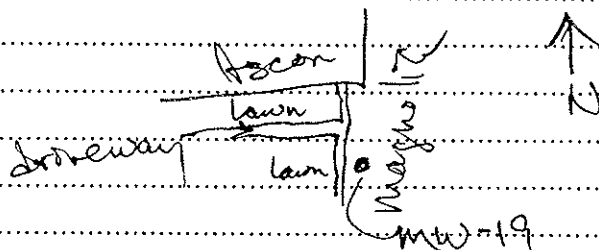
924 Anacapa Street, Suite 4A
Santa Barbara, California 93101
805-897-3800 (phone) 805-899-8689 (fax)

DAILY FIELD REPORT

PROJECT: ASCON RIFES
LOCATION: Huntington Beach PROJECT NO.: SP0202 TASK NO.: 20
DESCRIPTION: locate Wells/Boring location markers DATE: 10 day February month 2004 year
CONTRACTOR(S): NA
WEATHER, TEMPERATURE: _____

Time / Event

03:1500 Look for AW-1 - Mark out partial
Grid. Based on location from Well installation
report and where it is located currently
on site maps.
Could not locate.
1700 Measurement and Mark location for MW-20
location is 25' S of driveway to
adjacent property and 15' east of lawn



NAME: _____ PROJECT NO.: _____ HOURS: _____

Sheet No. _____ of _____

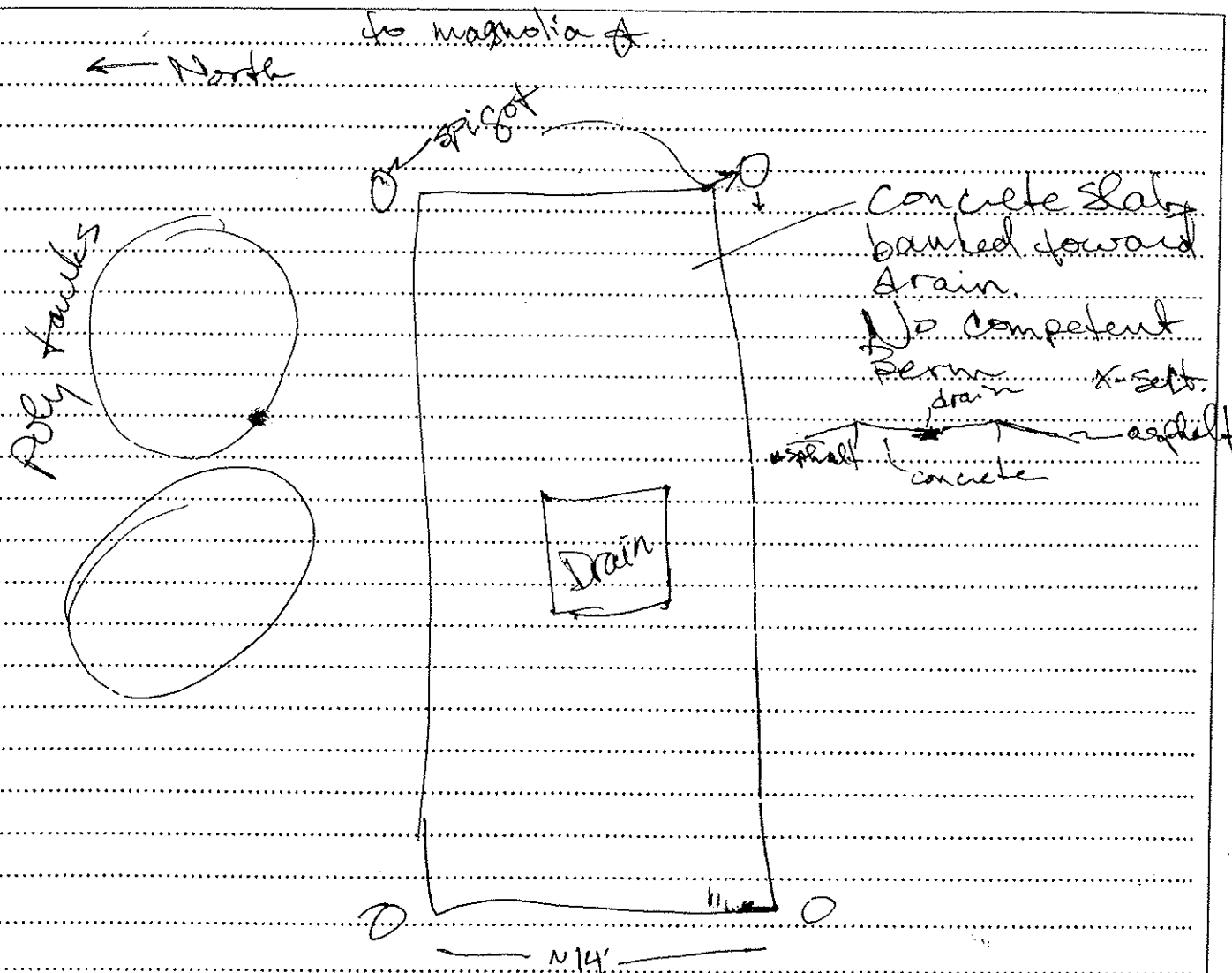


GEOSYNTEC CONSULTANTS

924 Anacapa Street, Suite 4A
Santa Barbara, California 93101
805-897-3800 (phone) 805-899-8689 (fax)

DAILY FIELD REPORT

PROJECT: _____
LOCATION: _____ PROJECT NO.: _____ TASK NO.: _____
DESCRIPTION: _____ DATE: _____ day _____ month _____ year
CONTRACTOR(S): _____
WEATHER, TEMPERATURE: _____




NAME: _____ PROJECT NO.: _____ HOURS: _____

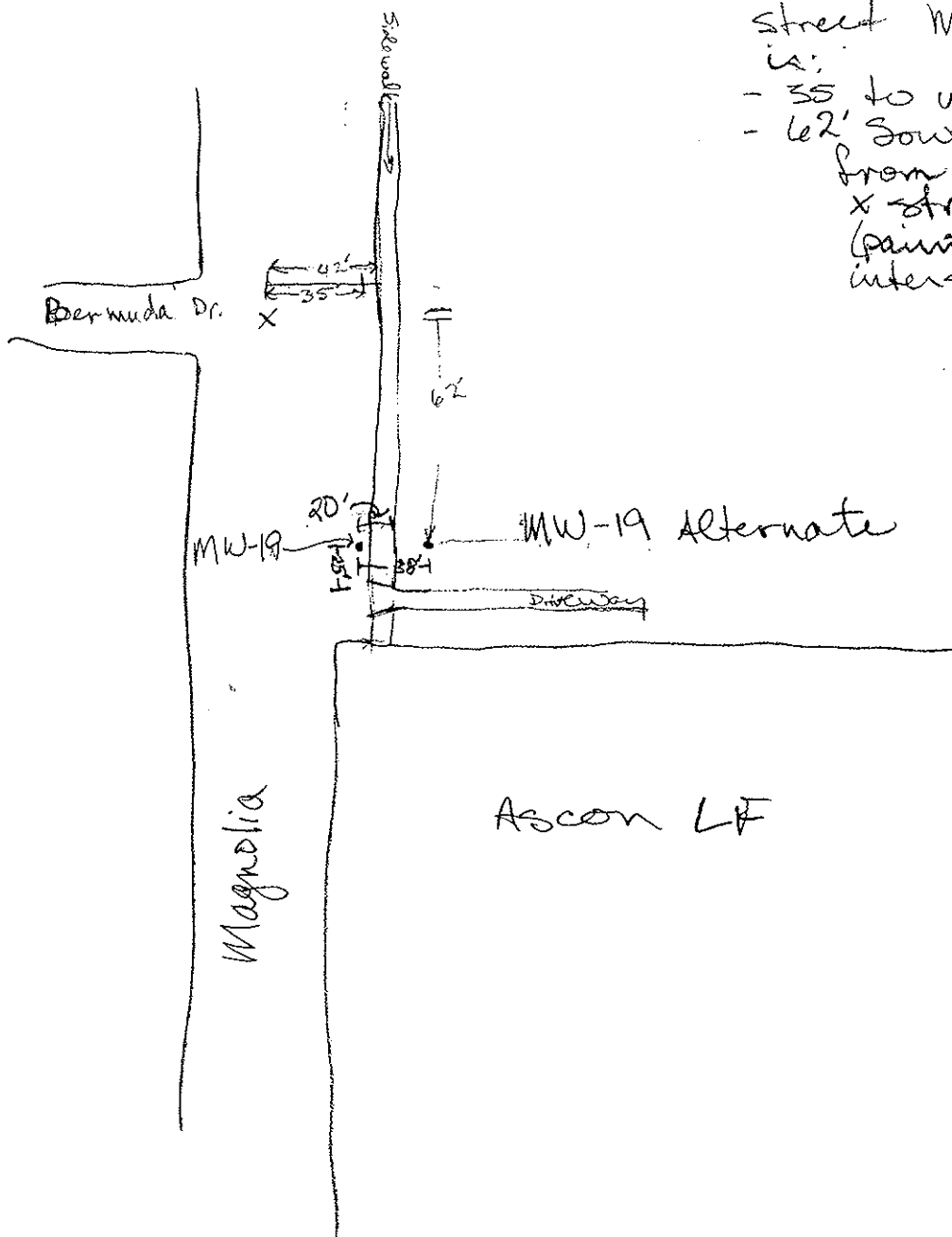
Sheet No. _____ of _____

Written by: _____ Date: ____/____/____ Reviewed by: _____ Date: ____/____/____
YY MM DD YY MM DD

Client: _____ Project: _____ Project/Proposal No.: _____ Task No.: _____

North


Ascon MW-19 and Alternate Locations



Street MW-19 location is:
 - 35' to west of centerline
 - 62' South of Bermuda from center line -
 X street control point (painted w/ nail in intersection).

Ascon LF





GEOSYNTEC CONSULTANTS

924 Anacapa Street, Suite 4A

Santa Barbara, California 93101

805-897-3800 (phone) 805-899-8689 (fax)

DAILY FIELD REPORT

PROJECT: Aseon

LOCATION: Huntington Beach

PROJECT NO.: SB0202 TASK NO.: 20

DESCRIPTION: Meet with Underground Utilities DATE: 20 day February month 2004 year

CONTRACTOR(S): _____

WEATHER, TEMPERATURE: _____

06:30 Drive to HB

09:30 Arrive at HB office to pick up checks for Permits

10:00 Onsite at ^{proposed} area of MW-19.

Well cleared by
So Cal Gas &
Verizon
S&P

10:05 John from City of HB Water onsite

Nothing in Landfill area and our marked
locations are clear.

10:10 John from City of HB Departs

10:15 Joanne from So Cal Gas onsite. MW-19 Cleared

She has concern about location for AW-1A.

There is a record of a 1 1/2" steel line that
enters the property near gate on Magnolia
for lease property.

She follows line in from street and
along length of fence line parallel to Magnolia.
I point out location of AW-1A to her
from the fence. She says there is
no conflict with that location. ~~at~~ marks
street.

10:40 Joanne from So Cal Gas departs.

11:30 Depart for Orange County Health Care Agency
to get permits for 3 wells

11:55 Arrive at OCHA - purchase 3 well permits.

NAME: LMorales

PROJECT NO.: SB0202

HOURS: _____



GEOSYNTEC CONSULTANTS

924 Anacapa Street, Suite 4A

Santa Barbara, California 93101

805-897-3800 (phone) 805-899-8689 (fax)

DAILY FIELD REPORT

PROJECT: Ascon

LOCATION: Huntington Beach PROJECT NO.: SB0202 TASK NO.: 20

DESCRIPTION: USA Meet & Well permit DATE: 20 day Feb month 2007 year

CONTRACTOR(S): _____

WEATHER, TEMPERATURE: _____

Time	Event
1215	Depart from OCHCA with permit Go to site (Ascon) to try new set of keys.
1345	Depart for SB
1630	Arrive in SB

NAME: L. Morales

PROJECT NO.: SB0202

HOURS: _____

Sheet No. 2 of 2



GEOSYNTEC CONSULTANTS

924 Anacapa Street, Suite 4A

Santa Barbara, California 93101

805-897-3800 (phone) 805-899-8689 (fax)

DAILY FIELD REPORT

PROJECT: Ascon

LOCATION: Huntington Beach

PROJECT NO.: SB0202

TASK NO.: 20

DESCRIPTION: Drill & install wells

DATE: 23 day February month 2004 year

CONTRACTOR(S): West Haymat

WEATHER, TEMPERATURE: Cool, partly cloudy, Showers predicted

Time	Event
0655	I arrive onsite. West Haymat (Mike, Joe & Billy) are onsite with Gary Yoshida.
0700	I take Gary and Mike to AW-4A location to look at access.
0710	I conduct H&S Tailgate. Gary takes notes.
0730	Pillers & GSC Mob to AW-4A location.
0800	hand auger to 5'. Then begin drilling (HSA) pilot hole for logging.
0815	I attempt to Calibrate PID even though it was certified calibrated by rental company. The Isobutylene tank pressure and the Regulator Valve were not threaded so that they could be used together (both male).
0830	I call ahead to resolve. They will send a new regulator to the office in Huntington Beach.
0910	Troy Robinson from West Haymat arrives at Decon to facilitate drum transport and cleaning.
0920	Zukin calls - He will be down in about 3 hours.
0925	Troy Departs.
1000	Pilot to 40' (42' overdrill) complete. Trip out auger and Decon.
1040	Drill in (HSA) 16" OD auger for conductor casing to 5' then continue Decon.
11:45	I depart site to pick up regulator valve for Isobutylene.

NAME: L. Morales

PROJECT NO.: SB0202

HOURS: 1



GEOSYNTec CONSULTANTS

924 Anacapa Street, Suite 4A
Santa Barbara, California 93101
805-897-3800 (phone) 805-899-8689 (fax)

DAILY FIELD REPORT

PROJECT: Ascon
LOCATION: Huntington Beach PROJECT NO.: SB0202 TASK NO.: 20
DESCRIPTION: Drill & install wells DATE: 23 day February month 2004 year
CONTRACTOR(S): West Haz Mat
WEATHER, TEMPERATURE: Sunny, warm

Time	Event
	for PID calibration.
1237	I receive phone call from insurance company (mass) to ask questions about what they need to send to the City of HB to complete the Encroachment permit process.
1300	I depart from Geosyntec's HB office.
1310	I arrive onsite at Ascon. Jeff Zukin is
1600	Onsite
1645	I depart site for Santa Barbara.
1900	I arrive in Santa Barbara.

NAME: J. Morales PROJECT NO.: SB0202 HOURS: _____



GEOSYNTEC CONSULTANTS

924 Anacapa Street, Suite 4A

Santa Barbara, California 93101

805-897-3800 (phone) 805-899-8689 (fax)

DAILY FIELD REPORT

PROJECT: Ascon

LOCATION: Huntington Beach

PROJECT NO.: 880202

TASK NO.: 20

DESCRIPTION: Leaking Missing Wells

DATE: 13

day Feb

month 2004

year

CONTRACTOR(S): Spectrum Geophysics

WEATHER, TEMPERATURE: _____

Time Event

0715 Arrive on site - Double check Measurements for Wells AW-6 and AW-7 locations. Crew is on site for site cleanup & Brush clearing.

0755 Spectrum Geophysical crew arrives.

Chuck Carter

Colin Embry

I show them maps of locations of 3 missing wells from when they were installed, maps of where the wells were located based on the survey late 1980s, and where they have been located on subsequent maps.

I show them AW-8 & tell them that per the well installation report from 1983, the wells have a 5' steel casing that was originally set to 3' bgs with 2' of sticks.

0700 We drive over to the location of AW-1. Upon arrival we have a tailgate Safety meeting.

Topics: Potential COCs

Types of waste in it (oilfield, industrial)

Hospital Route

Biological Hazards = snakes, rodents, insects } in landscape throughout site

0715 Colin and Chuck sign HASP & Begin marking

NAME: L. Morales

PROJECT NO.: 880202

HOURS: 9.75

Sheet No. 1 of 5



GEOSYNTec CONSULTANTS

924 Anacapa Street, Suite 4A

Santa Barbara, California 93101

805-897-3800 (phone) 805-899-8689 (fax)

DAILY FIELD REPORT

PROJECT: Ascon

LOCATION: Huntington Beach

PROJECT NO.: SB0202 TASK NO.: 20

DESCRIPTION: Locating Missing Wells DATE: 13 day February month 2004 year

CONTRACTOR(S): Spectrum Geophysical

WEATHER, TEMPERATURE: _____

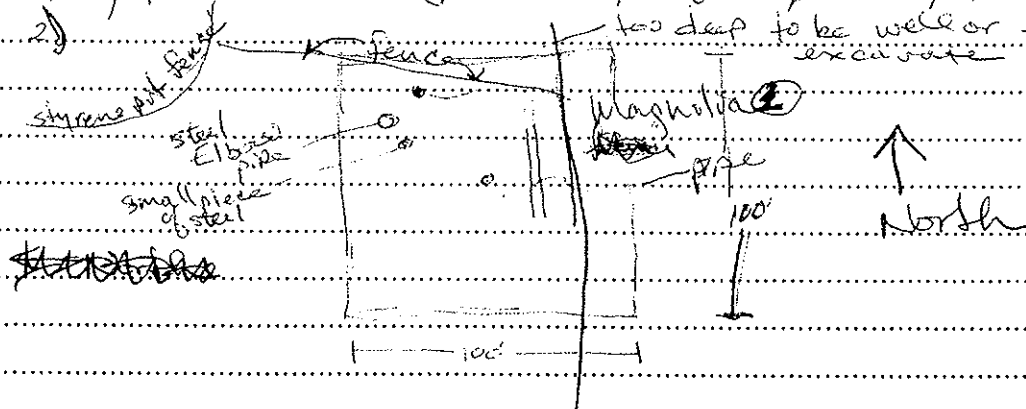
Time Event

0950 out grid for Survey with a portable proton precision magnetometer. Grid is 100' x 100' centered on location of well based on map from well installation. By Ecology & Environment in 1983. Gary Yoshida on site. I show him the locations of the proposed wells.

We go to the AW-1 and AW-1A area where the geophysics team is working.

They located five anomalies and marked them.

- 1) by fence line (parallel to it) a 1-2" pipe (along Magnolia St)
- 2) too deep to be well or - dug out excavate 2 1/2'



1010 Phoned office to see if we should look on North side of fence (20-25' farther to North). Mark was not available to talk on the phone. I decided to look at the other two locations and come back here if Mark wants us to.

-Maintenance man came by and informed that as long as crews are on site, need only close Magnolia gate. Lock when none on site.

NAME: L. Morales

PROJECT NO.: SB0202

HOURS: 9.75



GEOSYNTEC CONSULTANTS

924 Anacapa Street, Suite 4A

Santa Barbara, California 93101

805-897-3800 (phone) 805-899-8689 (fax)

DAILY FIELD REPORT

PROJECT: Ascon

LOCATION: Huntington Beach

PROJECT NO.: SBO202

TASK NO.: 20

DESCRIPTION: Locating Missing Wells

DATE: 13

day February

month 2004

year

CONTRACTOR(S): Spectrum Geophysical

WEATHER, TEMPERATURE: _____

Time Event

1015 showed Spectrum crew locations (centers) for Grids 100' for AW-6 and AW-7. They began work on setting up.

1020 I Go over Work plan and Appendices with Gary Yoshioka and answer his immediate questions. I tell him that we are operating by the letter of the W.P. & HASP. If he has any further questions, he may pose them to Eakin, Grivetti or myself.

11:25 Yoshioka departs site.

1300 Geophysics grid & Survey completed at AW-6 & 7 on land fill side of property fence.

there are a number of anomalies. Geophysics guy thinks they are mostly larger than a steel casing.

1330 Geophysics crew goes for lunch.

1400 Geophysics crew returns & Begins marking array along Hamilton Ave and north of property fence.

→ 1330 I go and Mark location for AW-1A.

1410 I drive to Magnolia Street to check location for MW-19 for overhead hazards and mark a location on grass (private property) to be cleared by USA as well as the street location.

→ See attached sketch map ←

1440 Spectrum crew is finishing survey processing. There are 2 ^{total} anomalies in the areas coinciding with

NAME: L. Morales

PROJECT NO.: SBO202

HOURS: 9.75



GEOSYNTEC CONSULTANTS

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DAILY FIELD REPORT

PROJECT: Ascon
LOCATION: Huntington Beach PROJECT NO.: SB0202 TASK NO.: 20
DESCRIPTION: locating missing wells DATE: 13 day February month 2004 year
CONTRACTOR(S): Spectrum Geophysics
WEATHER, TEMPERATURE: _____

Time Event

the locations I measured out from the Well Installation Report.

I asked the Surveyors if there was anything they could do to further confirm or assist ~~in~~ whether these are the wells we are looking for. They said that save for tearing up the asphalt, there isn't really any way to tell.

- We should consider whether we can have the drillers cookie cutter out the asphalt to expose soil underlying so as to check for the casing.
- The wells were most likely sheared off as result of paving the street based on their locations.
- Would we need permits to cut holes in street to expose likely well locations.
- The hits (anomalies) at the top of landfill slope along Hamilton are not likely wells as they installation report refers to the wells as "perimeter" wells to monitor offsite migration. The hits in the landfill property are in locations that cannot be referred to as "offsite".

NAME: L. Morales PROJECT NO.: SB0202 HOURS: 9.75

Sheet No. 4 of 5



GEOSYNTEC CONSULTANTS

924 Anacapa Street, Suite 4A

Santa Barbara, California 93101

805-897-3800 (phone) 805-899-8689 (fax)

DAILY FIELD REPORT

PROJECT: Ascon

LOCATION: Huntington Beach

PROJECT NO.: DB0202 TASK NO.: 20

DESCRIPTION: Locating Missing Wells

DATE: 13 day February month 2007 year

CONTRACTOR(S): Spectrum Geophysics

WEATHER, TEMPERATURE: _____

Time Event

- 1545 Go back to AW-1 location to complete array and look at the street.
The area north of the fence line (Generally perpendicular to magnolia) is very overgrown with bushes. The geophysics crew will get as far as they can with the magnetometer and what is inaccessible with that they will get as much area as possible with the metal detector. Then they will take the metal detector to the street and try to see if there are any hits there. The magnetometer won't work there because there is a fence and on a pipe/culvert and a heavy vehicle traffic with not much shoulder i.e., too much interference for the magnetometer to be effective.
- 1630 Spectrum Departs site.
- 1655 I Secure and depart site.
Drive to Santa Barbara.

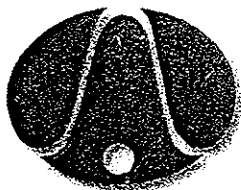
TVC - 3

NAME: C. Morales

PROJECT NO.: DB0202

HOURS: 9.75

Sheet No. 5 of 5



SPECTRUM GEOPHYSICS

Revealing The Subsurface

622 Glenoaks Blvd., San Fernando, CA 91340

Project Memo

www.spectrum-geophysics.com

San Fernando, CA
(818) 365-9371

Irvine, CA
(949) 261-5261

San Diego, CA
(760) 738-8561

Date <u>2/13/04</u>	Project Number <u>0402131B</u>
Project Name <u>Land Fill</u>	Client Contact <u>Laura Morales</u>
Site Address <u>Hamilton @ Magnolia</u>	Company <u>Geosyntec</u>
<u>Huntington Beach, CA</u>	Spectrum Staff <u>Clark / Salim</u>

Day <u>8.0</u>	<u>magnetometer, metal detector</u>	Report Y <u>N</u>
of _____	Labor Hrs _____ Equipment _____ Equipment _____ Other _____	Diagram Y <u>N</u>

Work Performed:

- ☐ Investigated _____ proposed ground intrusion sites for detectable subsurface interferences.
- ☐ Investigated _____ linear feet of proposed trench for detectable subsurface interferences.
- ☐ Delineated the surface trace of detectable utilities and subsurface interferences in _____ area(s) approximately _____ feet in size.

Other: Spectrum investigated 3 areas with dimensions of 100' x 100', 100' x 100', and 135 x 60' for detectable monitoring wells.

NOTE

Non-metallic and non-electrically conductive piping and materials are not detectable.

We recommend that you hand auger to a depth of _____ feet below ground.

We recommend that you call the One Call Center prior to excavating or installing borings.

Your potential boring locations were investigated for detectable subsurface interferences and their locations have been marked on the ground surface by a 12-inch diameter white circle or by stake or nail or flagging.

No consideration of liability will be given if borings are installed outside of the white circle or not dead-centered on the flagged stake or nail. Call for a revisit if additional boring locations are required.

Laura Morales for Geosyntec
Client/Rep Signature

SBC 202-00
Client's Project Number



GEOSYNTEC CONSULTANTS

66 San Diego
Martin Dix (714) 593-7707

DAILY FIELD REPORT

PROJECT: Ascon
 LOCATION: Kimington Bch PROJECT NO.: 580202 TASK NO.: 20
 DESCRIPTION: MW-20: Conductor Casing DATE: 23 day 02 month 2004 year
 CONTRACTOR(S): West H22 Met
 WEATHER, TEMPERATURE: Partly cloudy SKIES; cool w/ good breeze.

MW-20: DRILLING Conductor casing

06:52. Gm arrived @ site gate. crew already waiting (Mike, Jr., Billy, etc. to get supplies);
 opened gate.
 07:00 Laura on site. Laura & Gm & Mike viewed SW site to assess accessibility.
 07:19 Conductor Safety Meeting (Laura, Gm, Mike, Billy, Joe); Laura conducted meeting.
 • site overview
 • Review subcontractors' docs.
 • Review LOL's & Laceration/Injury Chemical
 • Air Monitoring
 • Emergency Phone #
 • Hospital Route
 • PPE
 • Work Hours
 07:31 End Safety Meeting.
 07:35 crew mobilizes to MW-20 site.
 07:45 Laura transfers well permit paperwork to Gm.
 08:00 Begin hand rigging to 5 ft.
 08:23 Begin augering w/ rig (Glandin); from 5 ft. 9-5 ft augers. 4 1/4" dia.
 09:00 crew was sampling every 5 ft; reminded them to now every 3 ft. starting @ 18 ft.
 last sample @ 15 ft.
 09:14 Laura off site.
 09:17 Bobcat delivery on site: (Tony Robinson).
 09:21 Laura back on site.
 09:50 Reached 40.5 ft; stopped; Mike needs to spend 10 min on rig. ^{water pump on}
 10:17 West H22 Met other personnel off site. (Tony).
 10:20 Crew began ops; began to put 4 1/4" augers in prep. for reaming.

NAME: Gary Yoshida PROJECT NO.: 580202 HOURS: 3

Sheet No. 1 of 3



DAILY FIELD REPORT

PROJECT: ASCON
 LOCATION: Huntington Bch PROJECT NO.: 580202 TASK NO.: 20
 DESCRIPTION: New 20" conductor casing DATE: 23 day 02 month 2004 year
 CONTRACTOR(S): West Haz Mat
 WEATHER, TEMPERATURE: Partly cloudy SKIES; Cool w/ good breeze.

10:25 9-13" 42 KSA mounting.
 10:31 Air monitoring white crew pulled 48" dia super with HC ^{stamped} ~~stamped~~ sands.
 small of HC but PID = 0.0; BPAE LEL = 0.
 crew working on upwind side of hole
 10:44 Begin to ram hole for conductor casing.
 10:58 Resume drilling 13" dia super from 5 ft. VAS.
 11:14 Billy offsite to get lunch for crew.
 11:59 Billy back on site; crew break for lunch.
 Laura offsite to pick up press. regulator @ HB ofc & lunch.
 12:21 crew back in ops; resume drilling @ 12:25
 12:39 13" ^{super} casing down to ~41 ft.
 12:42 Begin to lower 10" conductor casing (10 ft. lengths)
 crew uses RAM firing ram oil to lube steel conductor casing threads.
 12:48 Jack ZUKIN onsite.
 12:56 40 ft total 10" casing string completely lowered. (~1 ft stick up); Mike put ~30 gal of potable water in casing.
 13:11 Jack Z. offsite to visit other portions of ASCON LE.
 13:19 Mike said he would have to remove stuck super plug by:
 1) remove conductor casing.
 2) drill through plug.
 3) lower conductor casing back down.
 OK - crew proceed w/ task.
 13:56 completed drilling through plug; lower 10" conductor casing.
 13:57 Frank from DTSC onsite.
 14:16 Lowered test pipe to ~35 ft; Soil B in annulus.
 Begin to mix bentonite cement grout - 3 bags Portland cement type I/II (94 lbs)
 - Hydrogel (50 lb) 1/2 bag
 - 40 gal @ 3-port, 1/2 bent gel)
 14:40 - 50 gal @ 4-port, 1/2 bent gel)

NAME: Gary Yoshida PROJECT NO.: 580202 HOURS: 3



DAILY FIELD REPORT

PROJECT: Ascon
LOCATION: Huntington Bay PROJECT NO.: SB0202 TASK NO.: 20
DESCRIPTION: MW-20: Conductor casing DATE: 23 day 02 month 2004 year
CONTRACTOR(S): West Haz Mat
WEATHER, TEMPERATURE: _____

14:43. Frank & Jeff back on site.
14:50. Removed another 5 ft - 13" auger; Driller said he thinks gravel ~30 ft out of water.
14:51 45 gal - 6 3-cement, bent gel)
15:02. Removed another 5 ft - 13" auger; 25 ft of auger still down hole.
15:07 45 gal - 6 3-cement, bent gel)
15:21 45 gal - 6 3-cement, bent gel); frame @ 6 ft - 13" auger still in hole.
15:29 45 gal - 6 3-cement, bent gel)
Frank from DTSC off site; will be back tomorrow.
15:40. Entire 15 ft - 13 inch auger removed from hole.
15:49. Jeff off site.
16:00. Louis off site.
16:11. Gravel seal dropped ~10 ft; crew poured 2 bags ^{Extruding} ~~filler~~ bent chips inside conductor casing.
16:18 40 gal - 6 2-cement + bent gel) = Total 21 bags Portland cement used
175 bags bentonite gel used.
Crew will allow hole to settle; worried about conductor casing being buoyant.
16:40 Arrived @ AW-1A site w/ Mike & drill rig to set up decom equipment.
Said the ice plant will make it slick but should be able to do it.
Will keep decom on roadways ~150 ft from well for easier access.
17:15 Showed Mike GR24 for rehab work; will show Mike AW-B rehab work.
Billy & Joe moving drums to drum enclosure (10 soil + 2 decom water)
17:40 crew moved 6 barrels of soil to containment yard. Move off site; sun going down.
17:45 West Haz Mat crew off site after Mike saw AW-B well rehab work. END OF DAY.
on depart site. END OF DAY.

NAME: Gary Yoshioka PROJECT NO.: SB0202 HOURS: _____



DAILY FIELD REPORT

PROJECT: AsconLOCATION: Huntington BchPROJECT NO.: 580202TASK NO.: 20DESCRIPTION: Drill install AW-01A, AW-04A, B-04ADATE: 24 day 02 month 2004 yearCONTRACTOR(S): West Haz MatWEATHER, TEMPERATURE: Partly cloudy skies; breezy & cool.AW-01A: Drilling & well construction

06:48 Arrived @ site entrance; crew already started waiting @ gate; opened & mobilized.

07:00 Conduct Safety meeting

• Stuxent 25 cc but GeoFlow

• Hospital route review

• Drum Handling

• Site danger - ice plant

• Exclusion zone zones

• DI water to hydrate pellets

07:09 End Safety meeting; Had crew accidentally sign the visitor's sign in sheet (see sheet)

07:39 Begin to hand auger to 5 ft.

Mike placed a 3ft add on 1" PVC 4" deep
pipe to GP 24" w/ cap. Protective
monument to follow.

07:47 Begin to drill from 5 ft.

07:51 Drilled to 15 ft & wait for water recovery in well.

08:20 water @ 13.6 ft - bps; will drill down to 20 ft.

08:32 TD hole to 20 ft;

08:45 Here Home from unpool on site

08:54 Here departed site & continued his site inspection.

09:00 Begin surging the well after adding 5 bags RMC 2 1/2" sand

09:13 6 3/4 in. dia. auger pulled out of hole after hydrating bent (and) chips with

D.I. water (5 gal.)

5 ft monument (2 bags 1/3 stick up) cemented in place.

09:34 WL in AW-01A: 12.84 ft - toe & rising

1-55 gal. drum of decon water.

TD = 21.49 ft - toe (soft bottom); Generated 1-55 gal drum of soil

09:45 De-mob from AW-01A site; will decon augers @ end of day; have enough clean

augers to continue.

09:50 Arrived @ AW-04A site stop camp early.

NAME: Gray YoshidaPROJECT NO.: 580202

HOURS: _____



DAILY FIELD REPORT

PROJECT: Ascon (714)484-5410 Frank Lofso
 LOCATION: Drill install Aw-01A, Aw-04A, B-04A PROJECT NO.: SB0202 TASK NO.: 20
 DESCRIPTION: _____ DATE: 24 day 02 month 2004 year
 CONTRACTOR(S): West H2O Mt
 WEATHER, TEMPERATURE: Partly Cloudy Skies; breezy & cool

Aw-04A: Drilling & well construction

B-4A Drilling & well construction

10:15 Rig getting over location & crew prepping.

Frank from DTSC onsite.

10:25 Begin hand augering; Frank offsite.

10:45 Wt. in Aw-04 @ 6 ft - bgs.

Discussed w/ Mike that getting well @ 16 ft will not give us room to get 2 good seals,
 will get TD for Aw-04A @ 18 ft as described in w.p.

10:45 Received 18 ft sample & crew began to build well casing (deconed).

11:30 Frank from DTSC onsite.

11:43 Frank begins to depart site - Steve Hone from LA Proj Manager meets him at site.

12:06 Steve off-site, crew prep. to demob.

Wt. in Aw-04A = 9.8 ft - toe

TD = 18.52 ft - toe

Spoke to Mike & he said he wasn't surprised at stuff in well. "Development
 should take care of it."

Generated 1:55 exl. drum of soil.

12:23 Billy offsite to get lunch.

12:43 crew already set up @ B-4A

Wt. in B-4 = 21.06 ft - toe

12:51 Begin hand augering.

Steve Hone off-site to grab lunch.

13:00 Billy back onsite; crew back for lunch.

13:22 crew back in ops.

13:27 Steve back onsite.

~14:34 ~~At~~ Steve met Fire Dept. ^{city} inspector driving around site; Steve mentioned what
 we were doing; said only thing inspector complained about was the gate being unlocked.
 Warned crew about inspector around Ascon LF.

NAME: Gary T. Shih PROJECT NO.: SB0202 HOURS: _____



DAILY FIELD REPORT

PROJECT: ASCON LFLOCATION: Huntington BeachPROJECT NO.: SB0202TASK NO.: 20DESCRIPTION: Drill install AW-01A, AW-04A, B-04ADATE: 24 day 02 month 2002 yearCONTRACTOR(S): West HazmatWEATHER, TEMPERATURE: Partly cloudy skies, cool & breezy

14:47 CM, Fire Inspectors arrive, but in car.
Mike noted that they had trouble getting the well down to 31.4 after tilling, Roger
(2 bags) adding sand; sand bridged, so he had to push auger & hammer down sand.
15:20 Poured ~35 gal of Portland cement / Bent graft down hole to surface.
15:32 8" dia steel monument pushed down into grout.
Crew began clean up / decon effs.
2 bags 500 mix premix concrete + Rapid set concrete
16:02 WL = 21.93 ft to C @ B-4A TD = 33.41 ft to C
Generated 3 - 55 gal drums of soil
1 - 55 gal drum of decon water [Composite AW-04A/B-4A]
Steve Hone left site.
Guy goes to down containment area to open gate & label AW-01A drum.
16:45 Mike/ Joe covered MW-20 w/ chips around metal lid in prep for possible rain.
Said seal with @ 12 ft bags & they added another 40 gal to top.
17:21 Crew & Guy left site. END OF DAY

NAME: Guy YoshidaPROJECT NO.: SB0202HOURS:



DAILY FIELD REPORT

PROJECT: ASCON LFLOCATION: Huntington BchPROJECT NO.: 580202 TASK NO.: 20DESCRIPTION: Drill install MW-20DATE: 25 day 02 month 2014 yearCONTRACTOR(S): West Haz MatWEATHER, TEMPERATURE: Cloudy sky; cold (7:00 am)[Drill MW-20 = Day 2 Post Conductor Casing]

06:44 Arrived @ gate, crew already waiting (Mike, Joe & Richard)

<07:12> conduct safety meeting:

- from today

- lock gates as requested by City Fire Inspector

- Vol on GW

<07:16> - Air monitoring = having good headwinds

<07:44> completed safety training w/ Richard of West HazMat (replacement for Bill, today)

<08:20> Mike said they arrived @ 06:20 to complete surface well rehab work on Au. CB @ gate.
New 8" steel ^(new pickup) monument added on over existing one. looks very good.

07:07 crew working on 61-24 surface well rehab work adding a smaller steel monument.

07:10 crew @ 09 @ MW-20 site.

07:30 Mike said water @ ~15 ft ^{was} / 15-4" augers onsite for drilling.

Out at casing @ 29 ft

Begin to bail conductor casing & water.

bailed ~75 gallons of water from casing.

08:20 Mike said there is some Portland cement that is in bottom of casing, ^{said no problem} able to drill out

08:29 Begin drilling down from about 30 ft 29 ft.

09:40 Cased TD hole @ 70 ft, ended sampling in fine sand.

called Jeff again to ask if we are looking for a clay layer?

Told him I saw/logged a clayey 2 ft in last 6" of sampler (62-62.5 ft)

Next sampling @ 64 to 65.5 ft was fine sand again

said to set screen below that @ 64 ft to 74 ft. OK.

Told drillers I said they would be 1 auger shot but has an extension piece
to do the job.

09:37 Resume drilling from 70 ft

10:05 TD hole @ 74.5 ft. Can begin well construction.

NAME: Gary YoshidaPROJECT NO.: 580202

HOURS: _____



DAILY FIELD REPORT

PROJECT: Ascon LF Joff (805) ~~949-3800~~ 968-9671 (800) 655-6850 RICK WASH HZ
LOCATION: Huntington Beach PROJECT NO.: 980202 TASK NO.: 20
DESCRIPTION: Pill install MW-20 DATE: 25 day 02 month 2004 year
CONTRACTOR(S): West Hazmat
WEATHER, TEMPERATURE: Partly cloudy skies, very breezy & cool (10-70am); cloudy & hot (11-00)

11:03 Begin to wash screen (sieve) for sand pack.

11:36 Working on bent pellets (~30mm) to shell; ended @ ~11:25.

SD of tin tremie; bottom of tremie @ 47.4 ft bgs; top of seal @ 57.4.

11:49 Frank from DTSC onsite.

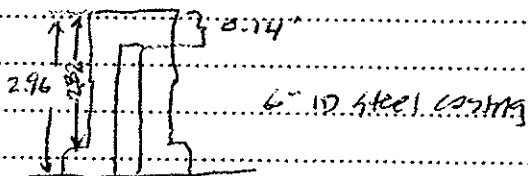
12:44 Frank off site; crew setting steel monument.

13:22 AW-01A WL = 12.82 ft-toc

13:25 AW-04A WL = 9.10 ft-toc

13:30 B-04A WL = 21.87 ft-toc

GP-24 New surface completion



14:55 Mike said he would be all wrapped up by 14:15; Mike said no later than 15:00 to start MW-19.

Called Jeff Z. and asked about encroachment permit.

Said let's wait till about 14:30 & call.

14:02 spoke to Mike about Jeff's plan. Crew still has to eat.

Said CAH permit usually has work time restrictions.

14:22 West Hazmat crew off site to grab lunch.

14:23 MW-20 WL = 26.88 ft-toc & rising slowly.

TD = 73.03 ft-toc.

14:40 spoke to Jeff Z. said no permit yet; will call later today if something happens.

Spoke to Mike (West Hazmat) & said for us to call the dc by 5:00 pm today if something happens or not. & call Mike to let him know what is happening.

14:50 GH off site; END OF DAY

NAME: Casey T Yoshida PROJECT NO.: 980202 HOURS: _____



DAILY FIELD REPORT

PROJECT: Ascon LF
 LOCATION: Huntington Bch PROJECT NO.: SB0202 TASK NO.: 20
 DESCRIPTION: Drill/Install MW-19 DATE: 27 day 02 month 2004 year
 CONTRACTOR(S): West H2O met
 WEATHER, TEMPERATURE: partly cloudy skies, breezy & cool.

DRILLING MW-19 & Installation

08:30 Arrived @ site: crew already waiting @ Hamilton Gate.
 08:43 Conduct Safety Meeting:
 - Traffic
 - Site set up.
 - taking work truck.
 08:43 End Safety Meeting.
 09:00 Arrived @ site (MW-19)
 09:03 Called Jeff G. Dons (city inspector): said OK, go ahead & set up; will be by ~10 min.
 Crew began Traffic Control (TC) setup.
 09:13 Began to hand auger
 09:35 Mike encountered what looks like a 4" steel pipe running E-W. ~3 ft. deep.
 Brad he pulled out what looks like gravel & glass pieces.
 will stop at 4 ft to south & start again.
 09:44 crew backfilled first hole w/ material removed from hole.
 09:41 Called Jeff Z. to make sure if that was OK. - OK.
 Crew had another hole through asphalt & began hand augering new hole.
 09:46 After ^{hand} augering to ~1.5 ft, water in hole. flowing in from south in very close angle to
 sub angular gravel.
 however, @ 2 ft, hit clayey silt then into clay soon after. will make sure seal
 2' below 2 ft. so well TD to 19 ft. to get seal from 3-2 ft.
 10:42 visitors from neighborhood walking in park stopped @ site outside exclusion zone.
 10:52 person ^(Electrical Engineer from town) inquired about what we were doing & watched crew construct well.
 TD hole to 19 ft. (sample went down to 19.5 ft.)
 10:52 visitors departed site.
 11:10 well completed; bent pellets to surface from 2 ft. bgs.

NAME: Gary T. Yoshida PROJECT NO.: SB0202 HOURS:



DAILY FIELD REPORT

PROJECT: ASCON LF
 LOCATION: Huntington Bch PROJECT NO.: 580202 TASK NO.: 20
 DESCRIPTION: Del/Install MW-19 DATE: 27 day 02 month 2024 year
 CONTRACTOR(S): West Hazard
 WEATHER, TEMPERATURE: Pretty cloudy skies, breezy & cool

..... Crew begin prep for surface completion & clean up.

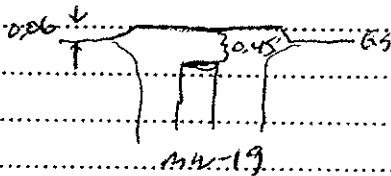
11:41 Arrived @ Asccon dump yard for placement of 2 Soil drums from MW-19 drilling.

Bill & Joe conducting surface completion @ MW-19

11:57 Mike & Cam depart Asccon LF after dropping off 2-55 gal drums of soil.

27 drums + 2 (MW-19) = 29 barrels

12:17



WL = 4.79 ft - toe

TD = 17.19 ft - toe

Mike cut off ~1 to 1.5 ft of casing = 19 ft TD. Needs well development.

12:22 Cam off site from MW-19; END OF THEIR DAY.

Two delineators left around wet, dyed concrete around well box.

12:33 Arrived @ MW-10 for static WL measurement.

WL = 26.28 ft - toe

13:10 Returned to Asccon LF AW-08 to place newly purchased pavers on new steel monument.

13:15 Pick up 2 traffic delineators surrounding newly installed & hardened concrete MW-19.

13:40 Called Frank @ DTSC & Jeff G. @ City of Huntington Bch that we were done on the streets - OK. END OF DAY.

[Handwritten signature]

NAME: Gary T. Yoshida PROJECT NO.: 580202 HOURS: _____



GEO SYNTec CONSULTANTS

2100 Main Street, Suite 150
Huntington Beach, California 92648
Tel: (714) 969-0800 Fax: (714) 969-0820

GS FORM
GEOTECH1 702

BOREHOLE RECORD

BORING **BE AW-01A**

START DATE **02-24-04**

FINISH DATE **02-24-04**

PROJECT **ASCOM**

LOCATION **Huntington Bch**

NUMBER **580202**

SHEET 1 OF 16

ELEVATION FT

DATUM

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOLIC LOG	ELEVATION (ft)	SAMPLES					COMMENTS
				NUMBER	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	
5	5220-51-1 - light olive brown (2.54 5/16) silt with (10% fine sand; dry; 30% shell fragments; TR plant frag, TR fine gravel (TR, 20, 80); q. plastic.	SM		100	6/6/19	0.0	0.0	0.0	07:49 begin hand auguring.
	7 in fine sand; mod. moist; (0.35, 65)			100			0.0	0.0	begin to drill @ 07:47
10	CLAY - light olive brown (2.54 5/16) clay; TR gravel (TR, 0, 100); stiff; high plastic.	CL		100	4/5/6	0.0	0.0	0.0	sampler plugged - low recovery
	CLAY - dk grayish brown (2.54 4/2) clay; TR gravel (TR, 0, 100); stiff; high plastic; micaceous material.			30			0.0	0.0	sampler plugged - low recovery
15	SAND - dk gray (2.54 1/2) fine sand with little silt; 30% shell fragments; micaceous; low plastic; v. moist (0.35, 5); well sorted	SP		30	8/10/12	0.0	0.0	0.0	sampler plugged - low recovery Drill stopped to wait for recovery, resume drilling @ 08:20
	same as above; saturated			100	5/6/12	0.0	0.0	0.0	
20	same as above; ↑ grain size (fine to med sand) well sorted; TR shell fragments; saturated (0.100, TR)			100	18/12	0.0	0.0	0.0	
	TD @ 20 ft on 02/24/04 @ 08:32								terminated drilling; TD = 20 ft.
25									
30									

CONTRACTOR **West H2E Mat**
EQUIPMENT **CME 95**
DRILL MTHD **HSA**
DIAMETER **8 3/4 in**
LOGGER **GTH**

NORTHING
EASTING
ANGLE
BEARING

REVIEWER

REMARKS:

COORDINATE SYSTEM:
SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS



GEO SYNTEC CONSULTANTS

924 Anacapa Street, Suite 4A
Santa Barbara, California 93101
Tel: (805) 897-3800 Fax (805) 899-8689

GS FORM
WELL SB 1.02

WELL RECORD

BORING BE AN-DIA
START DATE 02-24-04
FINISH DATE 02-24-04
PROJECT Aspen
LOCATION Washington Bch
NUMBER 580200

SHEET 1 OF 1

GROUND SURF. FT.
TOP OF CASING FT.

DATUM

LAYER DEPTH (FT)	MATERIAL DESCRIPTION	SYMBOLIC LOG	WELL LAYER DEPTH (FT)	Diagram	Notes
			3.16	0.37	LOCKING COVER SLIP CAP PROTECTIVE RISER CASING HEIGHT
					RISER LENGTH <u>5.4</u> RISER HEIGHT <u>3.16</u> RISER DIAM. <u>8 1/2"</u> CASING HEIGHT <u>2.79</u>
	Material Inventory: 6 bags BMC #2 1/2 sand 1 bag Enviroplug med bent. 1-5 gal D.I. water 1 bag Rapid Set concrete mix 2 bag Sic Mix Pre-Mix concrete				SURFACE COMPLETION: <u>10" steel Manulment</u> CONCRETE TYPE: <u>Sic Mix Pre-mix concrete</u> BORING DIAMETER: <u>8 3/4 in</u> TOP OF GROUT DEPTH: <u>—</u> GROUT TYPE: <u>A</u> GROUT QUANTITY: <u>—</u> WELL CASING DIAMETER: <u>2 in</u> WELL CASING TYPE: <u>Sch 40 PUC</u> TOP OF BENTONITE SEAL: <u>2</u> BENTONITE SEAL TYPE: <u>Enviroplug Med. bent chips</u> BENTONITE SEAL QUANTITY: <u>~ 3/4 bag</u> TOP OF FILTER SAND DEPTH: <u>—</u> FILTER SAND TYPE: <u>—</u> FILTER SAND QUANTITY: <u>—</u> TOP OF SAND PACK DEPTH: <u>same sampling 4 ft. bgs</u> SAND PACK TYPE: <u>BMC # 3/12</u> SAND PACK QUANTITY: <u>6 ft³</u> TOP OF WELL SCREEN DEPTH: <u>1.5 bgs 5</u> TOP OF WELL SCREEN ELEVATION: <u>1.5</u> BOTTOM OF WELL SCREEN DEPTH: <u>1.5 bgs 20</u> BOTTOM OF WELL SCREEN ELEVATION: <u>1.5</u> SCREEN TYPE: <u>Sch 40 PUC</u> SLOT DIRECTION AND SIZE: <u>0.020</u> BOTTOM OF WELL DEPTH: <u>20 ft. bgs</u> BOTTOM OF BORING GROUT TYPE: <u>—</u> GROUT QUANTITY: <u>—</u> BOTTOM OF BORING DEPTH: <u>20 ft. bgs</u>
5	2" = 0.022 ft ³ 5 3/4" = 0.42 ft ³ sand: (0.42 - 0.022) x 16' = 6.4 ft ³ bent: (0.42 - 0.022) x 2' = 0.8 ft ³				
10					
15					
20					

CONTRACTOR WCH H2Z Mst
EQUIPMENT CME 95
DRILL MTHD HSA
DIAMETER 8 3/4
LOGGER GM

NORTHING
EASTING
ANGLE
BEARING

REVIEWER

REMARKS:

COORDINATE SYSTEM:
SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS



GEO SYNTEC CONSULTANTS

2100 Main Street, Suite 150
Huntington Beach, California 92648
Tel: (714) 969-0800 Fax: (714) 969-0820

GS FORM
GEOTECH1 702

BOREHOLE RECORD

BORING B-AW-04A
START DATE 02-24-04
FINISH DATE 02-24-04
PROJECT ASQALF
LOCATION Huntington Bch
NUMBER SB0202

SHEET 1 OF 10

ELEVATION FT
DATUM

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOLIC LOG	ELEVATION (ft)	SAMPLES					COMMENTS
				NUMBER	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	
5	SAND: light olive brown [2.54 5/16] fine to coarse angular to sub rounded sand with thin fine to med. sub angular to sub rounded gravel (<75mm); TR silt; (5, 95, TR)	SP	10.2	X				0.0 10:34	10.25 Begin hand augering
									Begin drilling down 4 ft @ 10:36
	SILT CLAY: Black [2.54 2.5/1] clay with some silt med. stiff, med to high plastic; HC odor; staining (0.0, 100); moist	ML/CL	60	X		3 1/2 / 14	0.8	10:45	sampler plugged.
10	SILT SAND: dk greenish grey [6.35 4/16] fine sand with fine silt; micaceous; 5% shells (0.85, 15); no HC odor; well sorted sands; granular	SM	60	X		6 1/2 / 13	0.0	10:50	sampler plugged.
	SAND: dk greenish grey [6.35 4/16] fine sand; B. silt; 5% shell fragments; scattered; no HC odor; micaceous (0.100, TR)	SP	60	X		8 1/2 / 11	0.0	10:55	sampler plugged.
15	Grain size: fine to med sand; TR shell fragments TR coarse sand		60	X		19 1/2 / 12		10:59	sampler plugged
	same as above		60	X		13 1/4 / 15	0.0	11:04	
20	Drilled to 18 ft and sampled to 19.5 ft - bgs.								
25									
30									

CONTRACTOR West Haz Mat
EQUIPMENT CME 95
DRILL MTHD HSA
DIAMETER 8 1/4"
LOGGER amy

NORTHING
EASTING
ANGLE Vertical
BEARING

REVIEWER

REMARKS: Located approx. 10 1/2 ft E/SE from
AW-04.

COORDINATE SYSTEM:
SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS



GEO SYNTec CONSULTANTS

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GS FORM:
WELL SB 102

WELL RECORD

BORING B-AW-04A
START DATE 02-24-04
FINISH DATE 02-24-04
PROJECT AXON LF
LOCATION Huntington Beach
NUMBER 580202

SHEET 1 OF 1

GROUND SURF. FT.
TOP OF CASING FT.

DATUM

LAYER DEPTH (FT)	MATERIAL DESCRIPTION	SYMBOLIC LOG	WELL LAYER DEPTH (FT)	Diagram	Notes
			3.35		RISER LENGTH <u>5 ft</u> RISER HEIGHT <u>3.38'</u> RISER DIAM. <u>8 1/2"</u> CASING HEIGHT <u>2.98'</u>
	<u>material inventory</u> <u>7 bags RMC #2 1/2 sand</u> <u>1 bag Enviroplug med bent,</u>	<u>concrete</u> <u>1'</u>			SURFACE COMPLETION <u>10" steel monument</u> CONCRETE TYPE <u>rapid mix concrete +</u> <u>for mix pre-mixed concrete</u>
	<u>2" = 0.022 ft³</u> <u>8 3/4" = 0.42 ft³</u> <u>sand = (0.42 - 0.022) x 16' = 6.4 ft³</u> <u>bent chips = (0.42 - 0.22) x 1' = 0.4 ft³</u>	<u>bent chips</u> <u>med chips</u> <u>2'</u>			BORING DIAMETER <u>8 3/4 in</u> TOP OF GROUT DEPTH <u>-</u> GROUT TYPE <u>3</u> GROUT QUANTITY <u>-</u>
		<u>3'</u>			WELL CASING DIAMETER <u>2 in</u> WELL CASING TYPE <u>Sch 40 PVC</u> TOP OF BENTONITE SEAL <u>1 ft - bags</u> BENTONITE SEAL TYPE <u>Enviroplug med bent chips</u> BENTONITE SEAL QUANTITY <u>1 bag</u> TOP OF FILTER SAND DEPTH <u>-</u> FILTER SAND TYPE <u>-</u> FILTER SAND QUANTITY <u>-</u> TOP OF SAND PACK DEPTH <u>2 ft - bags</u> SAND PACK TYPE <u>RMC #2 1/2</u> SAND PACK QUANTITY <u>4 ft³</u> TOP OF WELL SCREEN DEPTH <u>18 bags 3</u> TOP OF WELL SCREEN ELEVATION <u>1 med -</u> BOTTOM OF WELL SCREEN DEPTH <u>18 bags 18</u> BOTTOM OF WELL SCREEN ELEVATION <u>1 med -</u> SCREEN TYPE <u>Sch 40 PVC</u> SLOT DIRECTION AND SIZE <u>0.020</u> BOTTOM OF WELL DEPTH <u>18 ft - bags</u> BOTTOM OF BORING GROUT TYPE <u>-</u> GROUT QUANTITY <u>-</u> BOTTOM OF BORING DEPTH <u>18 ft - bags</u>
		<u>18'</u>			

CONTRACTOR West H2O M2T
EQUIPMENT CME 95
DRILL MTHD HSA
DIAMETER 8 3/4"
LOGGER GTY

REVIEWER

NORTHING
EASTING
ANGLE
BEARING

Vertical

REMARKS: located approx. 10 ft E/SE of AW-04.
10.5

COORDINATE SYSTEM:
SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS



GEO SYNTec CONSULTANTS

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GS FORM
GEOTECH1 702

BOREHOLE RECORD

BORING B-4A
START DATE 02-24-04
FINISH DATE 02-24-04
PROJECT Ascend LF
LOCATION Huntington Beach
NUMBER 580202

SHEET 1 OF 10

ELEVATION FT
DATUM

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOLIC LOG	ELEVATION (ft)	SAMPLES					COMMENTS
				NUMBER	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	
									12:51 Begin hand augering.
5	CLAYEY SILT: Greenish brown (2.5y 5/2) mottled with dk yellowish brown (2.5y 4/6) silt with clay; slightly moist; micaceous; low plastic; soft. TR shells. (0,0,100)	CL/ML		120			0.0	13:58	13:27 started drilling down 4 ft.
	same as above; HC staining black (2.5y 2.5/1) HC odor			60		4 1/5 / 14	0.0	13:50	
10	CLAYEY SILT: Black (2.5y 2.5/1) silt with clay; mod. stiff; HC saturated; high plastic; wet (oily)			100		4 1/3 / 14	76.0	13:55	
	stringer (0,100,0) SAND: Black (2.5y 2.5/1) fine sand stringer; HC saturated.			60		6 1/2 / 14	11.0	13:57	
	CLAY: Black (2.5y 2.5/1) clay; high plastic; wet to highly stiff; HC saturated; strong HC odor; moist (0,0,100)	CL		60					
15	SAND: greenish gray (5Y 5/6) fine to med sand with TR coarse sand & TR fine gravel (<3mm); HC odor strong; dry (TR, 100, 0)	SP		60		15 1/2 / 19	15.0	13:42	
	CLAYEY SILT: Black (2.5y 2.5/1) silt with clay soft to med stiff; mod plastic; strong HC odor; moist	CL/ML		100		3 1/2 / 8	6.0	13:43	
20	same as above; TR shell fragments; v. moist			100		1 1/2 / 5	13.0	13:47	
	SILTY SAND: v. dk greenish gray (5Y 3/6) fine sand w/ silt; micaceous; 10% shell fragments; old HC odor; wet; well sorted (0,80,20)	SM		100		8 1/2 / 10	0.5	14:09	
25	transition to fine to med sand; no shell frag.			90		18 1/2 / 23	0.3	14:13	

CONTRACTOR West H2 Mat
EQUIPMENT CME 95
DRILL MTHD HSA
DIAMETER 8 3/4"
LOGGER GTH

REVIEWER

NORTHING
EASTING
ANGLE Vertical
BEARING

REMARKS:

COORDINATE SYSTEM:

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS



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GS FORM
GEOTECH1 7/02

BOREHOLE RECORD

BORING B-01A

START DATE 02-24-04

FINISH DATE 02-24-04

PROJECT A-001 LF

LOCATION Huntington Beach

NUMBER 580202

SHEET 2 OF 10

ELEVATION FT

DATUM

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOLIC LOG	ELEVATION (ft)	SAMPLES					COMMENTS	
				NUMBER	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)		TIME
	same as above			X		7 1/2		0.7	14:20	
	TD=31 ft @ 14:20 on 02/24/2004									Drilling stopped @ 31 ft TD.
35										
40										
45										
50										
55										
60										

CONTRACTOR W/ST H02M2
EQUIPMENT CME 95
DRILL MTHD HSA
DIAMETER 8 3/4"
LOGGER GTH

NORTHING
EASTING
ANGLE Vertical
BEARING —

REVIEWER

REMARKS:

COORDINATE SYSTEM:

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS



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GS FORM:
WELL SB 102

WELL RECORD

BORING B-4A

START DATE 02-24-04

FINISH DATE 02-24-04

PROJECT Ascon LF

LOCATION Huntington Bch

NUMBER SB0202

SHEET 1 OF 1

GROUND SURF. FT.

TOP OF CASING FT.

DATUM

LAYER
DEPTH
(FT)

MATERIAL
DESCRIPTION

SYMBOLIC LOG

WELL
LAYER
DEPTH
(FT)

RISER LENGTH

RISER HEIGHT

RISER DIAM.

CASING HEIGHT

5 ft

3.23

8 1/2"

2.59

material inventory:

7 bags RMC #2/12 sand

1 bag Enviroplug med Bent. chips

2 bags Portland cement type 2/D

5 2" = 0.022 ft²

8 1/4" = 0.42 ft²

72 in = (0.42 - 0.022) x 17' = 6.8 ft³

bent chips: (0.42 - 0.022) x 2' = 0.8 ft³

mat seal = (0.42 - 0.022) x 12' = 4.8 ft³

Portland cement/bentonite
grout

12' med
bent
chips
14'

16'

2 1/2
sand

31'

cap = 0.35'

SURFACE COMPLETION

CONCRETE TYPE

BORING DIAMETER

TOP OF GROUT DEPTH

GROUT TYPE

GROUT QUANTITY

WELL CASING DIAMETER

WELL CASING TYPE

TOP OF BENTONITE SEAL

BENTONITE SEAL TYPE

BENTONITE SEAL QUANTITY

TOP OF FILTER SAND DEPTH

FILTER SAND TYPE

FILTER SAND QUANTITY

TOP OF SAND PACK DEPTH

SAND PACK TYPE

SAND PACK QUANTITY

TOP OF WELL SCREEN DEPTH

TOP OF WELL SCREEN ELEVATION

BOTTOM OF WELL SCREEN DEPTH

BOTTOM OF WELL SCREEN ELEVATION

SCREEN TYPE

SLOT DIRECTION AND SIZE

BOTTOM OF WELL DEPTH

BOTTOM OF BORING GROUT TYPE

GROUT QUANTITY

BOTTOM OF BORING DEPTH

16" steel monument

rapid set concrete +

5:1 mix pre-mix concrete

8 3/4"

surface

Portland type 2/D

Hydrogel bentonite

9 bags

2"

Sch 40 PVC

12 ft - bags

Enviroplug med Bentchips

~1 bag

-

-

-

14

RMC #2/12

5 ft³

16 bags 16

ftmsl -

16 bags 31

ftmsl -

Sch 40 PVC

horizontal 0.020"

31 ft

-

-

31

CONTRACTOR West Hazmat
EQUIPMENT CME 95
DRILL MTHD HSA
DIAMETER 8 3/4"
LOGGER Gm

NORTHING
EASTING
ANGLE Vertical
BEARING

REVIEWER

REMARKS:

COORDINATE SYSTEM:

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

WELL SB SB.GPJ GEOSYNTec.GDT 2/14/03



GEO SYNTEC CONSULTANTS

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GS FORM
GEOTECH1 702

BOREHOLE RECORD

BORING **B MW-19**
START DATE **02-27-04**
FINISH DATE **02-27-04**
PROJECT **ASCON LF**
LOCATION **Huntington Bels**
NUMBER **580202**

SHEET 1 OF 10

ELEVATION FT
DATUM

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOLIC LOG	ELEVATION (ft)	SAMPLES					COMMENTS
				NUMBER	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)	
	Asphalt + Road base fill								
	very coarse gravel								Begin hand augering 09:41
									observed water flowing in from south
									of bh through gravels.
5	CLAY: drab to grey (SS 3/2) clay; med to highly stiff; high plasticity; saturated (0.0, 100)	CL		100		-	0.0	10:20	
				85		-	0.0	10:28	
	CLAY: dk greenish grey (GCE 1 3/10) micaceous; TR shell frag.; TR fine sand; v. moist								
	saturated								
10	SAND: dk greenish grey (GCE 1 3/10) fine sand; well sorted; micaceous; some silt; (0.90, 10); TR shell frag.; TR coarse sand;	SP		90		5 1/2	0.0	10:30	
	↑ in grain size to fine to med sands, v. micaceous			100		6 1/2	0.0	10:35	Battery on PID out
15	40% shell fragments			100		8 1/2	-	10:39	
	TR shell fragments			100		10 1/2	-	10:52	
20	TD = 19 ft on 02-27-2004 @ 10:52 sampled to 19.5 ft			100		10 1/2	-	10:52	DWING terminated TO = 19 ft.
25									
30									

CONTRACTOR **West Hozmal**
EQUIPMENT **CME 95**
DRILL MTHD **HSA**
DIAMETER **8 1/2"**
LOGGER **LTN**

NORTHING
EASTING
ANGLE Vertical
BEARING

REVIEWER

REMARKS: **Located approx. 67 ft south of LF SE property
line and approx 7 ft E. of west curb & gutter on Alameda**

COORDINATE SYSTEM:
SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS



GEO SYNTec CONSULTANTS

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GS FORM:
WELL SB 102

WELL RECORD

BORING Bx MW-19

SHEET 1 OF 1

START DATE 02-27-04

GROUND SURF. FT.

FINISH DATE 02-27-04

TOP OF CASING FT.

PROJECT ASCON LE

LOCATION Huntington Beach DATUM

NUMBER SB0202

LAYER
DEPTH
(FT)

MATERIAL
DESCRIPTION

SYMBOLIC LOG

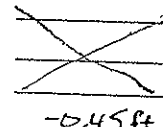
WELL
LAYER
DEPTH
(FT)

RISER LENGTH

RISER HEIGHT

RISER DIAM.

CASING HEIGHT



SURFACE COMPLETION

CONCRETE TYPE

BORING DIAMETER

TOP OF GROUT DEPTH

GROUT TYPE

GROUT QUANTITY

WELL CASING DIAMETER

WELL CASING TYPE

TOP OF BENTONITE SEAL

BENTONITE SEAL TYPE

BENTONITE SEAL QUANTITY

TOP OF FILTER SAND DEPTH

FILTER SAND TYPE

FILTER SAND QUANTITY

TOP OF SAND PACK DEPTH

SAND PACK TYPE

SAND PACK QUANTITY

TOP OF WELL SCREEN DEPTH

TOP OF WELL SCREEN ELEVATION

BOTTOM OF WELL SCREEN DEPTH

BOTTOM OF WELL SCREEN ELEVATION

SCREEN TYPE

SLOT DIRECTION AND SIZE

BOTTOM OF WELL DEPTH

BOTTOM OF BORING GROUT TYPE

GROUT QUANTITY

BOTTOM OF BORING DEPTH

17" dia. steel well

rapid set concrete +

5:1 mix pre-mix concrete

8 3/4"

—

—

—

2 in

sch 40 PVC

surface

similar 3/8" tr30 bent pellets

1 bucket

—

—

—

3 ft-bgs

RMC #2/12

4 ft³

4

ftm

19

ftm

sch 40 PVC

Horizontal 0.020"

19.4 ft-bgs

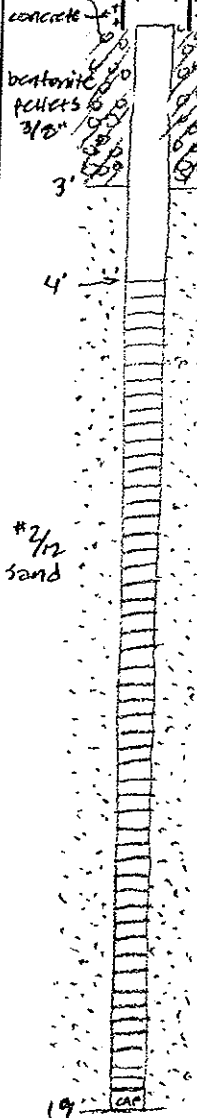
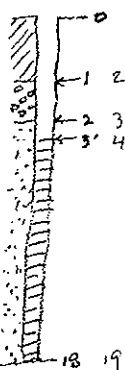
—

—

19 ft-bgs

$2' = 0.022 \text{ ft}^2$
 $8' = 0.75 \text{ ft}^2$ } difference 0.398 ft^2
sand: $0.35 \text{ ft}^2 \times 16' = 5.6 \text{ ft}^3$
bent clay: $0.35 \text{ ft}^2 \times 3' = 0.4 \text{ ft}^3$

proposed



LAP = 0.35'

CONTRACTOR West Hazmat

EQUIPMENT CME 95

DRILL MTHD HSA

DIAMETER 8 3/4"

LOGGER GTH

NORTHING

EASTING

ANGLE

BEARING

Vertical

REVIEWER

REMARKS:

Located approx. 67 ft South of LF Southwest
property line and approx. 7 ft East of west curb gutter
on Magnolia.

COORDINATE SYSTEM:

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

WELL_SB_SB.GPJ GEOINTEC.GDT 2/14/03



GEO SYNTEC CONSULTANTS

2100 Main Street, Suite 150
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GS FORM
ROCKCORE 702

BOREHOLE LOG

BORING B MW-20
START DATE 02-23-04
FINISH DATE 02-25-04
PROJECT Agway
LOCATION Huntington Beach
NUMBER 780202

SHEET 1 OF 18
GROUND SURF. FT.
TOP OF CASING FT.

DATUM

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOLIC LOG	STRUCTURE/ BEDDING/ GROUNDWATER	WELL LOG	Blow Count ELEVATION (ft)	SAMPLES					COMMENTS
						NUMBER	TYPE	REC (%) REC (%) REC (%)	PID READING (ppm)	TIME	
5	sandy silt - brown [1/4R 4/3] silt with 40% fine sand with TR subrounded fine to med gravel (< 50 mm); 2% gms moist; low plastic; (TR, 40, 60) same as above	SM			18/12	100			6.0	8:12	08:00 Begin hand digging
						308			-	8:26	28.2% begin augering with 15g. (slow)
10	Hydrocarbon (HC) soaked; odor color chg black [2.5/2.5/1]				12/12/22	100			1.1	08:45	
15	CLAY - v. dk green [2.5/3/1] clay; HC odor high plastic; soft; v. moist	CL			5/3/1	100			2.3	09:00	hole drilling; drilled soil that possibly CO mixture, will find on auger.
	same as above				1/1	100			4.5	09:07	No aug sample collected
20	same as above				3/2/4	100			5.5	09:12	
25	color chg: black [2.5/2.5/1]; med stiff lower moisture; high plastic; TR shells; TR mica.				4/5/6	100			0.4	09:27	
	silty sand - black [2.5/2.5/1] fine sand & silt micaceous; 10% shell frag (0; 70, 30); slight HC odor; low plastic; med surface	SP			14/24 30				0.2	09:30	

CONTRACTOR W&H H32 Met
EQUIPMENT CME 95
DRILL MTHD HSA
DIAMETER 8"
LOGGER GTY

REVIEWER

NORTHING
EASTING
ANGLE Vertical
BEARING

REMARKS: located ~10 ft E. of P-4.

COORDINATE SYSTEM:

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS



GEO SYNTEC CONSULTANTS

2100 Main Street, Suite 150
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GS FORM
ROCKCORE 7/02

BOREHOLE LOG

BORING **BK MW-20**
START DATE **02-23-04**
FINISH DATE **02-25-04**
PROJECT **Aspen**
LOCATION **Huntington Beach**
NUMBER **580202**

GROUND SURF. FT. **3**
TOP OF CASING FT. **3**
DATUM

SHEET 2 OF 3

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOLIC LOG	STRUCTURE/ BEDDING/ GROUNDWATER	WELL LOG	ELEVATION (ft)	SAMPLES				COMMENTS	
						NUMBER	TYPE	REC (%) OR REC (%)	PID READING (ppm)		TIME
	same as above				7/9/11	X			0.1	09:36	
					15/23/34	X			0.0	09:40	
35	increase in grain size: fine to med. sands; micaceous 5% shell frag. (0, 00, 20) color chg: dk greenish grey (6/5/04)				16/33	X			0.0	09:46	
	same as above; v. moist				19/23/34	X			0.0	09:50	-stopped drilling; preparing reaming bit Resume drilling @ 08:35 on 02-25-04
40	same as above; odorized; slight HC odor?				12/11/12	X			0.0	8:42	
45	hard dk greenish grey (6/5/04) fine sand; 5% shell frag; micaceous slight HC odor? (0, 100, 70); TR silts; wet	SP			12/15/17	X			0.0	8:49	
	TR shell frags; 5% fines (0, 95, 5)				14/16/19	X			0.0	08:55	
50	same as above				15/16/17	X			0.0	9:03	
	same as above; 5% shell frag no HC odor				17/15/17	X			0.0	9:06	
55	same as above; TR shell fragments,				17/09/23	X			0.0	9:13	
	↑ grain size to fine to med sands; TR silts										

CONTRACTOR **West H22 Mzt**
EQUIPMENT **CME-95**
DRILL MTHD **HSA**
DIAMETER **8"**
LOGGER **GTJ**

REVIEWER

NORTHING
EASTING
ANGLE Vertical
BEARING

REMARKS:

COORDINATE SYSTEM:

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS



GEO SYNTEC CONSULTANTS

2100 Main Street, Suite 150
Huntington Beach, California 92648
Tel: (714) 969-0800 Fax: (714) 969-0820

GS FORM:
ROCKCORE 7A02

BOREHOLE LOG

BORING # RCW-20

START DATE 02-23-04

FINISH DATE 02-25-04

PROJECT Asxon

LOCATION Huntington Bch

NUMBER SB0202

SHEET 3 OF 3

GROUND SURF. FT.

TOP OF CASING FT.

DATUM

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOLIC LOG	STRUCTURE/ BEDDING/ GROUNDWATER	WELL LOG	ELEVATION (ft)	SAMPLES					COMMENTS
						NUMBER	TYPE	REC & ROD (%)	PID READING (ppm)	TIME	
65	CLAYEY SILT: dk greenish gray (GCEY 4/100) silt with clay; med stiff; med to high plastic; TR fine sand (0, TR, 100) micaceous	CL ML			12/14/16	100			0.0	9:22	
	SAND: dk greenish gray (GCEY 4/100) fine sand; TR silts (0, 100, TR); very micaceous; TR shell frag.	SP			17/19/22	100			0.0	9:23	
	↑ in silts (0, 95, 5); soft; low plastic 5% shell frag.				16/17/19	100			0.0	9:34	
70	SILTY SAND: dk greenish gray (GCEY 4/100) fine sand with silt (0, 75, 25); low plastic; very micaceous; TR shell frag.	SP SM			17/19/22	100			0.0	9:40	
	SANDY SILT: dk greenish gray (GCEY 4/100) silt with some fine sand; (0, 25, 75); micaceous; low plastic	SM			17/19/22	100			0.0	10:05	
75	TD = 74.5 ft @ 10:05 on 02/25/2004										TD @ 74.5 ft stopped drilling
80											
85											
90											

CONTRACTOR W&H H22 M24
EQUIPMENT CME 95
DRILL MTHD HSA
DIAMETER 8"
LOGGER GM

REVIEWER

NORTHING
EASTING
ANGLE Vertical
BEARING

REMARKS:

COORDINATE SYSTEM:

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

WELL RECORD

BORING *B-110-20*
START DATE *02-23-04*
FINISH DATE *02-25-04*
PROJECT *Ascon*
LOCATION *Huntington Bch*
NUMBER *1B0202*

SHEET 1 OF 1

GROUND SURF.	FT.
TOP OF CASING	FT.

DATUM

LAYER DEPTH (FT)	MATERIAL DESCRIPTION	SYMBOLIC LOG	WELL LAYER DEPTH (FT)	Diagram		RISER LENGTH	5.0
			2.81			RISER HEIGHT	2.81
						RISER DIAM.	8 1/2"
						CASING HEIGHT	2.42
	Calc Vol for Conductor Annulus: 12.5' = 0.252 ft ³ 8 5/8" = 0.41 ft ³ 0.44 ft ³ ~ 40 ft ³ = 17.7 ft ³ (132 gal)						
	2" = 0.022' 8" = 0.35'						
	Grout: [0.35 - 0.022] x 13 ft = 4.3 ft ³						
5	bent chips: [0.35 - 0.022] x 3 ft = 1 ft ³						
	Grout Seal: [0.35 - 0.022] x 17 ft = 5.6 ft ³ [0.41 - 0.022] x 40 ft = 15.5 ft ³ 21.1 ft ³ or 157.8 gal						
10							
15							
20							

WELL_SB SB.GPJ GEOSNTEC.GDT 2/14/03

CONTRACTOR *West Hazmat*
EQUIPMENT *CME 95*
DRILL MTHD *HSA*
DIAMETER *8"*
LOGGER *Grn* REV

NORTHING	
EASTING	
ANGLE	Vertical
BEARING	—

REVIEWER

REMARKS:

located approx. ~10ft E. of P-4.

COORDINATE SYSTEM:

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS



DAILY FIELD REPORT

PROJECT: Ascon
 LOCATION: Huntington Beach PROJECT NO.: SB0202 TASK NO.: 20
 DESCRIPTION: Develop Wells DATE: 5 day 3 month 2004 year
 CONTRACTOR(S): Cress In-Situ Drilling
 WEATHER, TEMPERATURE: Sunny - high 60's to low 70's

Time	Event
0745	Arrive at H.B. office to pickup paperwork & equipment
0800	Drive to Ascon Site
0810	Arrive at site - Rich Reynolds (RR) is onsite. We have a pre-entry H&S tailgate meeting: - Hospital Route - Site Hx - Chemicals of Concern - Physical Hazards - PPE - Monitoring
0830	Enter site - show RR well locations & accessibility and Drum Storage Area
0845	Drop ^{Drum} trailer off at Drum Storage
0855	Set up on B-4A - Rich decons pump (takes it apart and cleans all components)
0940	Begin Surging on B-4A. There is an abundance of Bees near Well area
0945	ANL staff on site (H Steve Howe) he directed me to lock gate at all times unless not on. There is a reason to have it open for safety issues.
1055	Set pump at 2' off bottom of well
1100	Steve Howe & Guest depart
1220	Shut down pump
1225	Steve Howe returns to work area
1235	Steve Howe Departs site for day. Rich and I go to lunch.
1325	Return to site. Rich pumps purge water from tank in truck into drums. I label drums

NAME: L. Morales PROJECT NO.: SB0202 HOURS: 5.00



GEOSYNTEC CONSULTANTS

DAILY FIELD REPORT

PROJECT: Ascon

LOCATION: Huntington Beach

PROJECT NO.: SB0202 TASK NO.: 20

DESCRIPTION: Develop Wells

DATE: 3 day 3 month 2004 year

CONTRACTOR(S): Gregg In-Situ

WEATHER, TEMPERATURE: _____

Time	Event
1300	Set up on MW-20 Rich Decons Waterlevel meter and bailer and swab.
1400	Bail out sediments from bottom of well.
1510	Rich check decons pump to purge MW-20
1525	Began pumping MW-20
1720	Complete pumping MW-20. Rich collect recovery data. Rich packs up equipment and pump.
1955	Depart Site

LFM

NAME: L Morales

PROJECT NO.: SB0202 HOURS: 4.5

Sheet No. 2 of 2



DAILY FIELD REPORT

PROJECT: AsconLOCATION: Huntington BeachPROJECT NO.: SB0202TASK NO.: 20DESCRIPTION: Develop WellsDATE: 4 day March month 2004 yearCONTRACTOR(S): Craig In Situ

WEATHER, TEMPERATURE:

Time Event

- 0730 I arrive onsite. Rich Reynolds (Developer) has just arrived.
We drive directly to AW-1A for developing.
- 0740 H&S tailgate:
- Working on uneven ground / ruts / snake holes
- trip hazard
- Will be working on public street (MW-19) traffic hazards
- Brea encountered yesterday - be aware.
- 0750 Rich decons equipment prior to work startup
- 0755 I calibrated PID - Begin work on ~~MW~~ AW-1A
- 0838 I phoned Jeff Gibbons - City of HB Inspector - to inform of when we would be developing MW-1A.
- 0950 AW-1A complete - Rich Decons equipment and packs up to unload purge water at Drum Storage area.
- 1000 Developing Rig is stuck in iceplant. Rich works on resolving (Sandbags and dirt shoveled under tires)
- 1045 Rich is still stuck. he called a tow truck that will call him when they are near entrance
- 1110 Best towing Service onsite to tow Rig out of iceplant by AW-1A
- 1130 I Escort Tow Service to gate while Rich unloads ^{Rig} purge water from truck to drums.

NAME: C. MoralesPROJECT NO.: SB0202

HOURS: _____



GEOSYNTEC CONSULTANTS

DAILY FIELD REPORT

PROJECT: Ascon

LOCATION: Huntington Beach

PROJECT NO.: SB0202 TASK NO.: 20

DESCRIPTION: Develop Monitoring Wells

DATE: 04 day March month 2004 year

CONTRACTOR(S): Gregg L. Suter

WEATHER, TEMPERATURE: _____

Time Event

1150 Mob to MW-19. Car parked on well.
1327 Complete MW-19. Rich cleans up
1320 Phone call from Jeff Zukin for status report.
1400 Get set up on AW-4A
1405 Rich decons equipment from previous well
1410 Begin work on AW-4A
1540 Complete AW-4A
1550 Mob to drum storage area to label drums & transfer purge water into drums
1630 Depart site

LTM

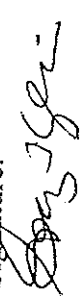




NAME: L. Morales

PROJECT NO.: SB0202


HOURS: _____

Sheet No. 2 of 2

Instrument Calibration Log

Instrument Information	
Instrument Name: <i>miniPae 2000 PID</i>	Manufacturer: <i>bae</i>
Serial Number: <i>110-06</i>	Last Service Date: <i>02/20/2004</i>
Parameters: <i>UCC</i>	Calibration Gas: <i>Isobutylene</i>
Calibration Procedure:	
Daily Calibration Results	
Date: <i>02/23/2004</i>	Calibration Result:
Notes: <i>Fzctm / Ashtech calibrated</i>	Name: <i>Gary Yoshida</i> Signature: 
Date: <i>02/23/2004 @ 14:15</i>	Calibration Result: <i>100 ppm 925</i>
Notes: <i>Afternoon calibration</i>	Name: <i>Gary Yoshida</i> Signature: 
Date: <i>02/24/2004 @ 06:15</i>	Calibration Result: <i>100 ppm 925</i>
Notes: <i>morning calibration</i>	Name: <i>Gary Yoshida</i> Signature: 
Date: <i>02/24/2004</i>	Calibration Result: <i>Reeb: 103 ppm</i>
Notes: <i>Afternoon calibration</i>	Name: <i>Gary Yoshida</i> Signature: 
Date: <i>02/25/2004</i>	Calibration Result: <i>Reeb: 110 ppm</i>
Notes: <i>morning calib.</i>	Name: <i>Gary T. Yoshida</i> Signature: 

Instrument Calibration Log

Instrument Information	
Instrument Name: <i>miniPro 2000 PID</i>	Manufacturer: <i>RAC</i>
Serial Number: <i>110-00</i>	Last Service Date: <i>02/20/2004</i>
Parameters: <i>VOC</i>	Calibration Gas: <i>Bobcatylene</i>
Calibration Procedure:	
Daily Calibration Results	
Date: <i>02-25-04</i>	Calibration Result:
<i>@ 14:30</i>	<i>Read 103 ppm</i>
Notes: <i>End of day calibration</i>	Name: <i>Greg T. Yoshida</i>
	Signature: 
Date:	Calibration Result:
Notes:	Name:
	Signature:
Date:	Calibration Result:
Notes:	Name:
	Signature:
Date:	Calibration Result:
Notes:	Name:
	Signature:

Instrument Calibration Log

Instrument Information	
Instrument Name: <u>Loriba V-10</u>	Manufacturer: <u>Loriba</u>
Serial Number: <u>009011 (Manufactured #)</u>	Last Service Date: <u>7/3</u>
Parameters: <u>pH, Conductivity, Spec. Cond, Turb</u>	Calibration Gas: <u>N/A</u>
Calibration Procedure: <u>pH=14.000, D.O.NTC, 4.49 mS/cm - SP 2/18/2006</u>	
Daily Calibration Results	
Date: <u>3-3-04</u>	Calibration Result: <u>pH 5.96, 4.40</u>
Notes: <u>Turb #1</u>	Name: <u>Laura Morales</u> Signature: <u>[Signature]</u>
	<u>Cond 4.49</u>
Date: <u>3-3-04</u>	Calibration Result: <u>3.99 pH</u>
Notes: <u>Prior to purging MW-20</u>	Name: <u>Laura Morales</u> Signature: <u>[Signature]</u>
	<u>4.48 Cond</u>
Date: <u>3-4-04</u>	Calibration Result: <u>pH 3.98</u>
Notes: <u>Prior to purging MW-20</u>	Name: <u>Laura Morales</u> Signature: <u>[Signature]</u>
	<u>Cond 4.50 mS/cm</u>
	<u>Turb 0</u>
Date:	Calibration Result:
Notes:	Name:
	Signature:
Date:	Calibration Result:
Notes:	Name:
	Signature:

[illegible]

Name: Wang T. Yoshida

Signature:

Handwritten signature: *[Signature]*

Air Monitoring Results

Instrument(s): GRAPE / Mini Rae 2000		Date: 02/24/2004						
Serial Number(s): 150-40364 / 110-00		Monitoring Location/Task: Aw-01A / Aw-01A (B-04A)						
Parameters: LEL / PPE		Page 1 of 1						
Time	PID (ppm)	Ram (mg/m3)	Explosimeter (%LEL)	Humidity (%)	Temperature (°F)	Wind Speed / Direction	Response Required (Y/N)	Comments
01:30	0.0		0	~50	59	-	Aw-01A	Background @ Aw-01A; upwind.
09:05	0.0		0	~50	62	2.5/S		Rig crew breathing (see)
10:24	0.0		0	~50	66	4.6/S		Background @ Aw-01A; upwind.
11:25	0.0		0	~50	68	3-4/SW		Rig @ breath zone.
12:53	0.0		0	~50	74	3-4/SW		Background @ B-04A upwind.
13:49	0.3	2x2.5meters OK, 52m OK.	0	~50	76	7/SW		Breath zone; good breeze.

Name: Gary Yoshida

Signature:

[Handwritten signature]

Name: Gary T. Yoshida

Signature:

2002

Air Monitoring Results

[illegible]

Name: Gray T. Yoshida

Signature:

100

Name: _____

Signature: _____

TABLE HASP 8-3

SITE VISITOR RECORD

All visitors are required to sign the visitor log and comply with the HASP requirements.

Date	Name of Visitor (Print)	Name of Firm (Print)	Purpose of Visit	Arrival Time	Departure Time
2/23/04	TROY ROBINSON	West Haysmat	Drop off Bobcat	0910	0925
2/23/04	Jeff Zuckin	Geosyntec	Supervisor/Reg	12:30	15:49
2/23/04	Frank Gonzalez	DTSC	fieldwork	1:55	15:29
2-23-04	Jana Lee	WEST HAYMAT	fieldwork	3:04	-
2-24-04	Mike Bauer	WHD	Drill	7:00	-
2-24-04	Billy Trim	W.H.D.	Field work	7:00	-
02-24-04	Gary Yoshida	Geosyntec	" "	07:00	-
2/24/04	Steve Howe	Project Navigator	Inspection/observation	08:45	16:00 09:54
2/24/04	Frank Gonzalez	DTSC	Fieldwork	10:05	11:43
2/24/04	Frank Gonzalez	DTSC	fieldwork	11:45	12:44
3-3-04	Steve Howe	PNL	site tour w/financial guy - away from work zone	0945	12:35
3-4-04	Michael Cook	East Tracing Service 97274 Warner Hunt Beach, CA 714-847-0730	Tow Development Rig out of location	1110	1135
3-4-04	Lu's Padilla	Gregg	Dropping off Additional drums	1520	1530
3-10-04	Dave Corder	QED	orientation w/ low flow sampling	0830	1630
3-16-04	Steve Howe	PNL	Inspection/observation	0840	1230
3-16-04	Frank Gonzalez	DTSC	Inspection/observation	1044	1300

Health &
Safety Meeting
02-24-04

5/13 2/23/04

TABLE HASP 8-3

SITE VISITOR RECORD

All visitors are required to sign the visitor log and comply with the HASP requirements.

Date	Name of Visitor (Print)	Name of Firm (Print)	Purpose of Visit	Arrival Time	Departure Time
2/13/09	Gary Yoshida	GeoSynTec	Site Walk	0940	1125
4/13/09	Frank Gonzales	DTSC	Inspection/ Observation	1525	1530
4/14/09	Mark Grivetti	GeoSynTec	Site Visit	1000	1025
4/14/09	Mike Reardon	GeoSynTec	Site Visit	1000	1025
4/15/09	Frank Gonzales	DTSC	Inspection/ Observation	1050	1130
4/19/09	Frank Gonzales	DTSC	Inspection/ Observation	1100	1257
4/20/09	Salvatore & Rafael	Nutter Surveying	Survey nearby installed wells	930	1235
4/21/09	Matt Esposito	GeoSynTec	Deliver Equipment	1150	1200
4/22	Dave	FNL	Coordinating replacing trailers	0915	1345
4/22	Matt Esposito	GeoSynTec	Delivering Equipment	1400	1410

ATTACHMENT C
MONITORING WELL PERMIT

ORANGE COUNTY HEALTH CARE AGENCY
ENVIRONMENTAL HEALTH DIVISION2009 E. EDINGER AVENUE
SANTA ANA, CA 92705-4720FAX: (714) 667-3600
(714) 972-0749

CITY <u>Huntington Beach</u>		DATE <u>2-18-04</u>
WELL LOCATION (ADDRESS IF AVAILABLE) <u>Ascon Landfill site (see location figure)</u>		
NAME OF WELL OWNER <u>Ascon Site Responsible Parties</u>		
ADDRESS <u>C/O Project Navigator Limited</u> <u>One Pointe Drive Suite 320</u>		
CITY <u>Brea</u>	ZIP <u>92821</u>	TELEPHONE <u>714-388-1800</u>
NAME OF CONSULTING FIRM <u>GeoSyntec Consultants, Inc</u>		
BUSINESS ADDRESS <u>924 Anacapa St Suite 4A</u>		
CITY <u>Santa Barbara</u>	ZIP <u>93101</u>	TELEPHONE <u>805-897-3800</u>
NAME OF DRILLING CO. <u>West Hazmat</u>		C-57 LICENSE NO. <u>Exp 5/2005</u> <u>#819548</u>
CITY <u>Anaheim</u>	ZIP <u>92805</u>	TELEPHONE <u>714-939-6850</u>
DIAGRAM OF WELL SITE (Use additional sheets and/or attachments) <u>see attached mgs</u>		
I hereby agree to comply in every respect with all requirements of the Health Care Agency and with all ordinances and laws of the County of Orange and of the State of California pertaining to well construction, reconstruction and destruction, including the requirements to maintain the integrity of all significant confining zones. <u>[Signature]</u> <u>2-17-04</u> APPLICANT'S SIGNATURE DATE <u>Jeff Zukin</u> PRINT NAME <u>805-897-3800 / 805-899-8689</u> PHONE NUMBER FAX NUMBER		
<input type="checkbox"/> SITE PLAN ATTACHED		
OR ACCOUNTING USE ONLY: HSO NO. <u>184814</u> CHECK NO. <u>7010</u> DATE <u>2-20-04</u> AMOUNT <u>948</u> INTL <u>mt</u>		
APPROVAL BY OTHER AGENCIES: JURISDICTION _____ REMARKS _____ _____		
WHEN SIGNED BY ORANGE COUNTY HEALTH CARE AGENCY REPRESENTATIVE, THIS APPLICATION IS A PERMIT. 272-09.0803 (AS/96)		
DISPOSITION OF PERMIT (DO NOT FILL IN): <input checked="" type="checkbox"/> APPROVED SUBJECT TO THE FOLLOWING CONDITIONS: A. NOTIFY THIS AGENCY AT LEAST 48 HOURS <input type="checkbox"/> PRIOR TO START. <u>2/23/04</u> <input type="checkbox"/> PRIOR TO SEALING THE ANNULAR SPACE OR FILING OF THE CONDUCTOR CASING. B. <input type="checkbox"/> SUBMIT TO THE AGENCY WITHIN 30 DAYS AFTER COMPLETION OF WORK, A WELL COMPLETION REPORT AND/OR DRILLING LOGS. PLEASE REFERENCE PERMIT NO. C. <input checked="" type="checkbox"/> SECURE ALL MONITORING WELLS TO PREVENT TAMPERING. D. <input type="checkbox"/> OTHER _____ <input type="checkbox"/> DENIED <u>[Signature]</u> <u>2/20/2004</u> PERMIT ISSUED BY DATE <u>Dan Yokoyama</u> <u>(714) 667-3657</u> PRINT NAME PHONE NUMBER		

WELL PERMIT NUMBER

04-02-32

City of Huntington Beach

Public Works Department

Permit #: 04-133

Reporting District #: 474

PW File #:

Receipt #:

PERMIT FOR RIGHT-OF-WAY ENCROACHMENT☒ Construction☐ Obstruction☐ Bin Obstruction☐ Excavation

Project Location: Magnolia, SWC @ Hamilton

Description of Work: Construct test well

Item ID	Item Description	Unit Price	Quantity	Extended Price
514	Traffic Control Setup	\$625.00 each	1.00	\$625.00
610	Abandon / Construct Monitor (Test) Well	\$625.00 each	1.00	\$625.00
0 - GIS / Survey points				
Construction Total				\$1,250.00
Construction Total x 8%				\$100.00
Additional Admin. Fees				\$0.00
Administration Fee				\$227.00
Total Cost				\$327.00

R E Q U I R E M E N T S

Permission is hereby granted to applicant to perform the above described work in accordance with approved plans and specifications furnished or herein made reference to. **48 hours advance notice** must be given prior to commencement of any phase of this work [telephone (714) 536-5431 for Engineering or (714) 536-5921 for water]. A copy of a valid permit and signed plans must be kept at the project site at all times while work is in progress. Chapter 10.16 and 12.24 of H.B.M.C. "Traffic Control" shall be enforced.

THE UNDERSIGNED APPLICANT CERTIFIES:

- I am properly licensed as required by the City of Huntington Beach and State of California, and certify that in the performance of work for which this permit is issued I shall not employ any person in violation of the workers compensation laws of the State of California, and
- I have read this application and all statements hereon are correct and complete. I agree to perform all work in accordance with the standard plans and specifications on file with the Director of Public Works. All USA markings will be removed by the applicant upon completion of work
- I will guarantee all work performed under this permit for a period of one year from the date of final acceptance. Failures will be corrected to the satisfaction of the Director of Public Works within two weeks after notification.

Business Name: GeoSyntec Consultants

Business Address: 621 NW 53rd St, #650

Boca Raton, FL 33487

Business Phone #: ()

Emergency Phone #: ()

State License #:

City License #:

By:

Signature

Date

Printed

Any trench work 5 feet and deeper, requires a shoring plan signed and stamped by a registered Civil Engineer.

Cash Deposit Required ☐ Yes ☒ No

Amount: Receipt #:

Other Fees

- Water Inspection Fee - \$150

For Official Use OnlyTraffic Control Plan Required ☐ Yes ☒ No

City of Huntington Beach Traffic

Control Standard Plan No.:

Date Issued 25-Feb-04

Expiration Date: 25-Apr-04

Issued By:

Signature

Von Holle, J.

Printed

Inspection	Date	Inspector
Preliminary		
Final		

ATTACHMENT D

BOREHOLE LOGS AND WELL CONSTRUCTION DIAGRAMS



GEO SYNTec CONSULTANTS

924 Anacapa Street, Suite 4A
Santa Barbara, CA 93101
(805) 897-3800

GS FORM:
WELL BORE 01/04

BOREHOLE LOG

BORING

AW-1A

SHEET 1 OF 1

START DRILL DATE Feb 24, 04

ELEVATION DATA:

FINISH DRILL DATE Feb 24, 04

GROUND SURF. 9.67 ft

LOCATION Huntington Beach, CA

TOP OF CASING 12.46 ft

PROJECT Ascon LF

DATUM NAVD88

NUMBER SB0202

DEPTH (ft-bgs)	DESCRIPTION 1) Unit/Formation, Mem.7) Plasticity 2) Soil/Rock Name 8) Density/Consistency 3) Color 9) Structure 4) Moisture 10) Other (Mineralization, 5) Grain Size Discoloration, Odor, etc.) 6) Percentage	GRAPHIC LOG	WELL LOG	GROUNDWATER OR STRUCTURE	ELEVATION (ft)	SAMPLE				COMMENTS 1) Rig Behavior 2) Air Monitoring		
						SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)		PID READING (ppm)	TIME (00:00)
	FILL				9							Began hand augering @ 07:39
					8							
					7							
	@3'-Sandy SILT (SM): light olive brown [2.5Y 5/4]; dry; silt with little fine sand; 30% shell fragments; trace plant fragments; trace fine gravels (TR,20,80); no: plasticity				6			6	100	0.0	07:42	
5					5			8				
	@6'-Increase in fine sand (0,35,65); moderately moist				4			9				
	CLAY (CL) :light brown [2.5Y 5/3] clay (TR,0,100); trace gravel; stiff, high plasticity				3				100	0.0	07:45	Began to drill @ 07:47
					2							
	@9'-color change to dark greyish brown [2.5Y 4/2]; micaceous; mottled				1							
10					0			4	30	0.0	07:48	Sampler plugged-low recovery.
					-1			5				
					-2			6				
	SAND (SP) :dark green grey [GLEYS 4/10Y] very moist; fine sand with very little silt(0,95,5); 30% shell fragments; micaceous; low plasticity; well sorted				-3			8	30	0.0	07:51	Sampler plugged-low recovery.
15					-4			10				@13'-Encountered groundwater. Drill stopped to wait for recovery. Resumed drilling @ 08:20.
	@15'-becomes saturated				-5			12				
					-6			5	100	0.0	08:26	
					-7			9				
					-8			12				
	@18'-Increase in grain size; fine- to medium- grained sand (0,100,TR); well sorted; trace of shell fragments; saturated				-9			18	100	0.0	08:30	
20					-10			12				
					-11							Terminated drilling; Total depth = 20'
					-12							
					-13							
					-14							
					-15							
					-16							
					-17							
					-18							
					-19							
					-20							

CONTRACTOR West Hazmat
EQUIPMENT CME 95
DRILL MTHD HSA
DIAMETER 8.75 inches
LOGGER GTY

NORTHING 2183561.02
EASTING 6037899.81
COORDINATE SYSTEM:
OCS Bechmark

NOTES:

WELL BORE ASCONLF80202 04.GPJ GEOSYNTec.GDT 7/16/04



GeoSYNTEC CONSULTANTS

924 Anacapa Street, Suite 4A
Santa Barbara, CA 93101
(805) 897-3800

GS FORM:
WELL COMP AG 01/04

WELL CONSTRUCTION LOG

BORING

AW-1A

SHEET 1 OF 1

START DRILL DATE Feb 24, 04

ELEVATION DATA:

FINISH DRILL DATE Feb 24, 04

GROUND SURF. 9.67 ft

LOCATION Huntington Beach, CA

TOP OF CASING 12.46 ft

PROJECT Ascon LF

DATUM NAVD88

NUMBER SB0202

DEPTH (ft-bgs)	COMMENTS 1) Groundwater 2) Surge Time 3) Dedicated Pump	GRAPHIC LOG	WELL MATERIAL DEPTH (FT-BGS)	SURFACE COMPLETION:
				TYPE 10" Steel Monument RISER HEIGHT 3.16 ft. RISER DIAM. 8.5 in. WELL CASING HEIGHT 2.79 ft. CONCRETE PAD SIZE
				LOCKING COVER SLIP CAP PROTECTIVE RISER CASING HEIGHT
			2.0 4.0 5.0	BORING DEPTH 20 ft-bgs ORIGINAL BORING DIAMETER 8.75 in. REAM BORING DIAMETER
			7.7 5.7 4.7	WELL CONSTRUCTION WELL CONSTRUCTION DATE Feb. 24, 2004 WELL DEPTH 20 ft-bgs WELL CASING DIAMETER 2 in. WELL CASING MATERIAL Sch40 PVC SCREEN SLOT SIZE/DIRECTION 0.020 in. TOP OF SCREEN 5 ft-bgs BOTTOM OF SCREEN 20 ft-bgs END CAP/SUMP LENGTH 0.35 ft
			19.7 20.0	GROUT TOP DEPTH Ground Surface TYPE/BRAND Pre-mix concrete QUANTITY USED 2 bags VOLUME FLUID USED PLACEMENT METHOD Poured into borehole
			-10.0 -10.3	BENTONITE SEAL TOP DEPTH 2 ft-bgs TYPE/BRAND Envriplug Med. Bent Chips QUANTITY USED .75 bag VOLUME FLUID USED 5 gallons of Distilled Water SET-UP TIME PLACEMENT METHOD Through Auger
				TRANSITION SAND TOP DEPTH TYPE/BRAND QUANTITY USED PLACEMENT METHOD
				SAND/GRAVEL PACK TOP DEPTH 4 ft-bgs TYPE/BRAND RMC #2/12 QUANTITY USED 6 bags (6 ft³) PLACEMENT METHOD Through Auger
				BOTTOM FILL TOP DEPTH TYPE/BRAND QUANTITY USED PLACEMENT METHOD

CONTRACTOR West Hazmat
EQUIPMENT CME 95
DRILL MTHD HSA
DIAMETER 8.75 inches
LOGGER GTY

NORTHING 2183561.02
EASTING 6037899.81
COORDINATE SYSTEM:
OCS Benchmark

DEDICATED PUMP SYSTEM:
TYPE/BRAND:
MODEL:
CONTROLLER TYPE:

WELL COMP AG ASCONLFSB0202_04.GPJ GEOSYNTEC.GDT 7/16/04

START DRILL DATE Feb 24 04

ELEVATION DATA:

FINISH DRILL DATE Feb 24. 04

GROUND SURF. 6.88 ft

LOCATION Huntington Beach, CA

TOP OF CASING 9.78 ft

PROJECT Ascon LF

DATUM NAVD88

NUMBER SB0202

GS FORM:
WELL BORE 01/04

BOREHOLE LOG

DEPTH (ft-bgs)	DESCRIPTION 1) Unit/Formation, Mem.7) Plasticity 2) Soil/Rock Name 8) Density/Consistency 3) Color 9) Structure 4) Moisture 10) Other (Mineralization, 5) Grain Size Discoloration, Odor, etc.) 6) Percentage	GRAPHIC LOG	WELL LOG	GROUNDWATER OR STRUCTURE	ELEVATION (ft)	SAMPLE					COMMENTS 1) Rig Behavior 2) Air Monitoring	
						SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)		TIME (00:00)
	FILL				6							Began hand augering @ 10:25
					5							
					4							
					3			100	0.0	10:34		
5	@3'-SAND (SP): light olive brown [2.5Y 5/6]; fine- to coarse-grained sand; angular to sub rounded sand with little fine to medium subangular to subrounded gravel (<75 mm); trace silt (5,95,TR)				2							Began drilling from 4' @ 10:36
	IMPACTED FILL				1							Sampler plugged.
	@6'-Silty CLAY (ML-CL): black [2.5Y 2.5/1]; moist; clay with some silt (0.0,100); moderate stiff, moderate to high plasticity; hydrocarbon odor; staining				0		3	60	0.8	10:45		
					-1		6					
					-2		7	60	0.0	10:50		@9'-Encountered groundwater. Sampler plugged.
10	Silty SAND (SM) : dark greenish grey [GLEY 4/10Y]; saturated; fine sand with little silt (0.85,15); micaceous; 5% shells; no hydrocarbon odor; well sorted sands				-3		8					
					-4							
					-5		8	60	0.0	10:55		Sampler plugged.
	SAND (SP) : dark greenish grey [GLEY 4/10Y]; saturated; fine sand; trace silt (0.100,TR); 5% shell fragments; no hydrocarbon odor; micaceous				-6		9					
					-7		11					
15	@15'-Increase in grain size: fine- to medium-grained sand; trace shell fragments; trace coarse sand				-8							
					-9		10	60		10:59		Sampler plugged.
					-10		10					
					-11		12					
					-12		13	100	0.0	11:04		
					-13		14					
20					-14		15					Drilled to 18' and sampled to 19.5'.
					-15							
					-16							
					-17							
					-18							
					-19							
					-20							
					-21							
					-22							
30					-23							

CONTRACTOR West Hazmat
EQUIPMENT CME 95
DRILL MTHD HSA
DIAMETER 8.75 inches
LOGGER GTY

NORTHING 2183435.73
EASTING 6036756.21
COORDINATE SYSTEM:
OCS Benchmark

NOTES:



GEOSYNTEC CONSULTANTS

924 Anacapa Street, Suite 4A
Santa Barbara, CA 93101
(805) 897-3800

GS FORM:
WELL COMP AG 01/04

WELL CONSTRUCTION LOG

BORING

AW-4A

SHEET 1 OF 1

START DRILL DATE Feb 24, 04 ELEVATION DATA:
FINISH DRILL DATE Feb 24, 04 GROUND SURF. 6.88 ft
LOCATION Huntington Beach, CA TOP OF CASING 9.78 ft
PROJECT Ascon LF DATUM NAVD88
NUMBER SB0202

SURFACE COMPLETION:

TYPE 10" Steel Monument
RISER HEIGHT 3.38 ft.
RISER DIAM. 8.5 in.
WELL CASING HEIGHT 2.98 ft.
CONCRETE PAD SIZE

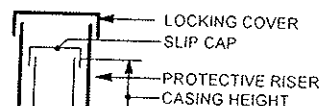
DEPTH
(ft-bgs)

COMMENTS

- 1) Groundwater
- 2) Surge Time
- 3) Dedicated Pump

GRAPHIC LOG

WELL
MATERIAL
DEPTH
(FT-BGS)



1.0 4.4 5.9
2.0 4.9
3.0 3.9
17.7 -10.8
18.0 -11.1

BORING DEPTH 18 ft-bgs
ORIGINAL BORING DIAMETER 8.75 in.
REAM BORING DIAMETER

WELL CONSTRUCTION

WELL CONSTRUCTION DATE Feb. 24, 2004
WELL DEPTH 18 ft-bgs
WELL CASING DIAMETER 2 in.
WELL CASING MATERIAL Sch40 PVC
SCREEN SLOT SIZE/DIRECTION 0.020 in.
TOP OF SCREEN 3 ft-bgs
BOTTOM OF SCREEN 18 ft-bgs
END CAP/SUMP LENGTH 0.35 ft

GROUT

TOP DEPTH Ground Surface
TYPE/BRAND Pre-mix concrete
QUANTITY USED ~1 bag
VOLUME FLUID USED
PLACEMENT METHOD Poured into borehole

BENTONITE SEAL

TOP DEPTH 1 ft-bgs
TYPE/BRAND Enviroplug Med. Bent. Chips
QUANTITY USED < 1 bag
VOLUME FLUID USED ~3 gallons of Distilled Water
SET-UP TIME
PLACEMENT METHOD Poured into borehole

TRANSITION SAND

TOP DEPTH
TYPE/BRAND
QUANTITY USED
PLACEMENT METHOD

SAND/GRAVEL PACK

TOP DEPTH 2 ft-bgs
TYPE/BRAND RMC #2/12
QUANTITY USED 4 bags (4 ft³)
PLACEMENT METHOD Through Auger

BOTTOM FILL

TOP DEPTH
TYPE/BRAND
QUANTITY USED
PLACEMENT METHOD

CONTRACTOR West Hazmat
EQUIPMENT CME 95
DRILL MTHD HSA
DIAMETER 8.75 inches
LOGGER GTY

NORTHING 2183435.73
EASTING 6036756.21
COORDINATE SYSTEM:
OCS Bechmark

DEDICATED PUMP SYSTEM:

TYPE/BRAND:
MODEL:
CONTROLLER TYPE:

WELL COMP AG ASCONLF80202_04.GPJ GEOSYNTec.GDT 7/16/04



GeoSYNTEC CONSULTANTS

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Santa Barbara, CA 93101
(805) 897-3800

GS FORM:
WELL BORE 01/04

BOREHOLE LOG

BORING

B-4A

SHEET 1 OF 2

START DRILL DATE Feb 24, 04
FINISH DRILL DATE Feb 24, 04
LOCATION Huntington Beach, CA
PROJECT Ascon LF
NUMBER SB0202

ELEVATION DATA:
GROUND SURF. 19.56 ft
TOP OF CASING 22.16 ft
DATUM NAVD88

DEPTH (ft-bgs)	DESCRIPTION 1) Unit/Formation, Mem.7) Plasticity 2) Soil/Rock Name 8) Density/Consistency 3) Color 9) Structure 4) Moisture 10) Other (Mineralization, 5) Grain Size Discoloration, Odor, etc.) 6) Percentage	GRAPHIC LOG	WELL LOG	GROUNDWATER OR STRUCTURE	ELEVATION (ft)	SAMPLE					COMMENTS 1) Rig Behavior 2) Air Monitoring	
						SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)		TIME (00:00)
	FILL				19							Began Hand augering @ 12:51
					18							
					17							
	@3'-Clayey SILT (CL-ML): grayish brown [2.5Y 5/2] with dark yellowish brown [2.5Y 4/6]; slightly moist; silt with clay (0,0,100); micaceous; low plastic; soft; trace shells				16			100	0.0	12:58		
5					15							Started drilling from 4' @ 13:27
	IMPACTED FILL @6'-color change to hydrocarbon staining black [2.5Y 2.5/1]; hydrocarbon odor				14							
					13	4		60	0.0	13:30		
					12	5						
					11	4						
	WASTE @9'-becomes wet (oily); moderate stiffness; hydrocarbon saturated; high plastic				10	4		100	76.0	13:35		
10					9	3						
					8	4						
	@12'-SAND (SP): fine sand stringer (0,100,0); hydrocarbon saturated				7	6		60	11.0	13:39		
	@12.5'-CLAY (CL): black [2.5Y 2.5/1]; moist; clay (0,0,100); high plasticity; moderate to highly stiff; hydrocarbon saturated; strong hydrocarbon odor				6	12						
					5	14						
15	SAND (SP): greenish grey [GLEYS 5/5GY]; dry; fine to medium sand with trace of coarse sand and trace of fine gravel (<3mm) (TR, 100,0); strong hydrocarbon odor				4	15		60	15.0	13:42		
					3	18						
					2	19						
	Clayey SILT (CL-ML): black [2.5Y 2.5/1]; moist; silt with clay; soft to moderate stiffness; moderate plasticity; strong hydrocarbon odor				1	3		100	6.0	13:43		
20					0	6						
	@21'-becomes very moist; trace shell fragments				-1	8						
					-2	1		100	13.0	13:47		
					-3	2						
					-4	5						
	Silty SAND (SM): very dark greenish grey [GLEYS 3/5GY]; wet; fine sand with silt (0,80,20); micaceous; 10% shell fragments; hydrocarbon odor; well sorted				-5	8		100	0.5	14:09		@23.5'-Encountered groundwater.
25					-6	9						
					-7	10						
	@27.5'-increased grain size to fine- to medium-grained sands; no shell fragments				-8	18		90	0.3	14:13		
					-9	21						
					-10	23						

CONTRACTOR West Hazmat
EQUIPMENT CME 95
DRILL MTHD HSA
DIAMETER 8.75 inches
LOGGER CTY

NORTHING 2183798.39
EASTING 6036903.70
COORDINATE SYSTEM:
OCS Benchmark

NOTES:

WELL BORE ASCON LF SB0202 04.GPJ GEOSYNTEC.GDT 7/16/04



GEOSYNTEC CONSULTANTS

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(805) 897-3800

GS FORM:
WELL BORE 01/04

BOREHOLE LOG

BORING

B-4A

SHEET 2 OF 2

START DRILL DATE Feb 24, 04

ELEVATION DATA:

FINISH DRILL DATE Feb 24, 04

GROUND SURF. 19.56 ft

LOCATION Huntington Beach, CA

TOP OF CASING 22.16 ft

PROJECT Ascon LF

DATUM NAVD88

NUMBER SB0202

DEPTH (ft-bgs)	DESCRIPTION 1) Unit/Formation, Mem.7) Plasticity 2) Soil/Rock Name 8) Density/Consistency 3) Color 9) Structure 4) Moisture 10) Other (Mineralization, Discoloration, Odor, etc.) 5) Grain Size 6) Percentage	GRAPHIC LOG	WELL LOG	GROUNDWATER OR STRUCTURE	ELEVATION (ft)	SAMPLE					COMMENTS 1) Rig Behavior 2) Air Monitoring	
						SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)		TIME (00:00)
					-11			17	100	0.7	14:20	Drilling stopped @ 31', total depth
					-12			21				
					-13			3				
					-14							
					-15							
					-16							
					-17							
					-18							
					-19							
					-20							
					-21							
					-22							
					-23							
					-24							
					-25							
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					-29							
					-30							
					-31							
					-32							
					-33							
					-34							
					-35							
					-36							
					-37							
					-38							
					-39							
					-40							

CONTRACTOR West Hazmat

EQUIPMENT CME 95

DRILL MTHD HSA

DIAMETER 8.75 inches

LOGGER GTV

NORTHING 2183798.39

EASTING 6036903.70

COORDINATE SYSTEM:

OCS Benchmark

NOTES:

WELL BORE ASCONLFBSB0202 04.GPJ GEOSYNTec.GDT 7/16/04



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Santa Barbara, CA 93101
(805) 897-3800

GS FORM:
WELL COMP AG 01/04

WELL CONSTRUCTION LOG

BORING B-4A

SHEET 1 OF 1

START DRILL DATE Feb 24, 04 ELEVATION DATA:
FINISH DRILL DATE Feb 24, 04 GROUND SURF. 19.56 ft
LOCATION Huntington Beach, CA TOP OF CASING 22.16 ft
PROJECT Ascon LF DATUM NAVD88
NUMBER SB0202

SURFACE COMPLETION:

TYPE 10" Steel Monument
RISER HEIGHT 3.23 ft.
RISER DIAM. 8.5 in.
WELL CASING HEIGHT 2.59 ft.
CONCRETE PAD SIZE

BORING DEPTH 31 ft-bgs
ORIGINAL BORING DIAMETER 8.75 in.
REAM BORING DIAMETER

WELL CONSTRUCTION

WELL CONSTRUCTION DATE Feb. 24, 2004
WELL DEPTH 31 ft-bgs
WELL CASING DIAMETER 2 in.
WELL CASING MATERIAL Sch40 PVC
SCREEN SLOT SIZE/DIRECTION 0.020 in.
TOP OF SCREEN 16 ft-bgs
BOTTOM OF SCREEN 31 ft-bgs
END CAP/SUMP LENGTH 0.35 ft

GROUT

TOP DEPTH Surface
TYPE/BRAND Portland Type III Hydrogel bentonite
QUANTITY USED 9 bags
VOLUME FLUID USED 35 gallons
PLACEMENT METHOD Through Auger

BENTONITE SEAL

TOP DEPTH 12 ft-bgs
TYPE/BRAND Enviroplug Med. STET
QUANTITY USED 1 bag
VOLUME FLUID USED 5 gallons of Distilled Water
SET-UP TIME
PLACEMENT METHOD Through Auger

TRANSITION SAND

TOP DEPTH
TYPE/BRAND
QUANTITY USED
PLACEMENT METHOD

SAND/GRAVEL PACK

TOP DEPTH 14 ft-bgs
TYPE/BRAND RMC #2/12
QUANTITY USED 5 bags (5 ft³)
PLACEMENT METHOD Through Auger

BOTTOM FILL

TOP DEPTH
TYPE/BRAND
QUANTITY USED
PLACEMENT METHOD

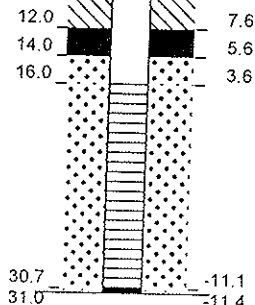
COMMENTS

- 1) Groundwater
- 2) Surge Time
- 3) Dedicated Pump

GRAPHIC LOG

WELL MATERIAL DEPTH (FT-BGS)

LOCKING COVER
SLIP CAP
PROTECTIVE RISER
CASING HEIGHT



DEPTH (ft-bgs)

10
20
30
40
50
60
70
80
90
100

CONTRACTOR West Hazmat
EQUIPMENT CME 95
DRILL MTHD HSA
DIAMETER 8.75 inches
LOGGER GTY

NORTHING 2183798.39
EASTING 6036903.70
COORDINATE SYSTEM:
OCS Benchmark

DEDICATED PUMP SYSTEM:

TYPE/BRAND:
MODEL:
CONTROLLER TYPE:

WELL COMP AG ASCONLFSB0202 04.GPJ GEOSYNTec.GDT 7/16/04



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Santa Barbara, CA 93101
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GS FORM:
WELL BORE 01/04

BOREHOLE LOG

BORING

MW-19

SHEET 1 OF 1

START DRILL DATE Feb 27, 04

ELEVATION DATA:

FINISH DRILL DATE Feb 27, 04

GROUND SURF. 5.65 ft

LOCATION Huntington Beach, CA

TOP OF CASING 5.20 ft

PROJECT Ascon LF

DATUM NAVD88

NUMBER SB0202

DEPTH (ft-bgs)	DESCRIPTION 1) Unit/Formation, Mem.7) Plasticity 2) Soil/Rock Name 8) Density/Consistency 3) Color 9) Structure 4) Moisture 10) Other (Mineralization, 5) Grain Size Discoloration, Odor, etc.) 6) Percentage	GRAPHIC LOG	WELL LOG	GROUNDWATER OR STRUCTURE	ELEVATION (ft)	SAMPLE					COMMENTS 1) Rig Behavior 2) Air Monitoring	
						SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)		TIME (00:00)
	FILL Asphalt and Road Base Fill @1'-very coarse gravel				5							Began hand augering at 09:41, observed water flowing in from South of boring hole through gravels.
					4							@1'-Perched water encountered.
					3							
					2				100	0.0	10:20	
5	CLAY (CL) :dark olive gray [5Y 3/2]; saturated; clay (0,0,100); moderate to high stiffness; high plasticity				1							Began driving @ 10:23 from 4'.
	@6'-color change to dark greenish-grey [GLEI 1 3/10Y]; very moist; micaceous; trace shell fragments; trace fine sand				0							
					-1				85	0.0	10:28	
	@9'- becomes saturated				-2							
					-3							
10	SAND (SP) :dark greenish grey [GLEI 1 3/10Y]; fine sand (0,90,10); well sorted; micaceous; some silt; trace of shell fragments; trace of coarse sand				-4			5 6 9	90	0.0	10:30	@9'-Second encounter of groundwater.
	@12'-increase in grain size from fine- to medium-grained sands; very micaceous				-5							
					-6							
	@15'-40% shell fragments				-7			6 6 8	100	0.0	10:35	Battery on PID out.
					-8							
	@18'-trace shell fragments				-9							
					-10			8 10 10	100		10:39	
					-11							
					-12							
					-13			10 10 13	100		10:52	
20					-14							Drilling terminated at a total depth of 19 ft-bgs on 27 February 2004 @ 10:52. Sampled to 19.5'.
					-15							
					-16							
					-17							
					-18							
					-19							
					-20							
					-21							
					-22							
					-23							
30					-24							

CONTRACTOR West Hazmat
EQUIPMENT CME 95
DRILL MTHD HSA
DIAMETER 8.75 inches
LOGGER GTY

NORTHING 2183285.78
EASTING 6037947.94
COORDINATE SYSTEM:
OCS Benchmark

NOTES:

WELL BORE ASCONLF0202 04.GPJ GEOSYNTEC.GDT 7/16/04



GeoSYNTEC CONSULTANTS

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Santa Barbara, CA 93101
(805) 897-3800

GS FORM:
WELL COMP AG 01/04

WELL CONSTRUCTION LOG

BORING

MW-19

SHEET 1 OF 1

START DRILL DATE Feb 27, 04
FINISH DRILL DATE Feb 27, 04
LOCATION Huntington Beach, CA
PROJECT Ascon LF
NUMBER SB0202

ELEVATION DATA:
GROUND SURF. 5.65 ft
TOP OF CASING 5.20 ft
DATUM NAVD88

SURFACE COMPLETION:

TYPE 12" diameter, traffic box
RISER HEIGHT
RISER DIAM.
WELL CASING HEIGHT -0.45 ft.
CONCRETE PAD SIZE Rapid set concrete and sir mix

DEPTH
(ft-bgs)

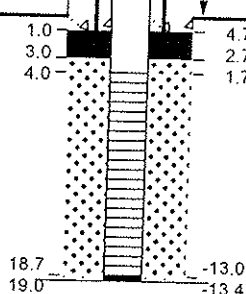
COMMENTS

- 1) Groundwater
- 2) Surge Time
- 3) Dedicated Pump

GRAPHIC LOG

WELL
MATERIAL
DEPTH
(FT-BGS)

LOCKING COVER
SLIP CAP
PROTECTIVE RISER
CASING HEIGHT



Well installed in roadway. Traffic box installed at ground level at surface.

BORING DEPTH 19 ft-bgs
ORIGINAL BORING DIAMETER 8.75 in.
REAM BORING DIAMETER

WELL CONSTRUCTION

WELL CONSTRUCTION DATE Feb. 27, 2004
WELL DEPTH 19 ft-bgs
WELL CASING DIAMETER 2 in.
WELL CASING MATERIAL Sch40 PVC
SCREEN SLOT SIZE/DIRECTION 0.020 in.
TOP OF SCREEN 4 ft-bgs
BOTTOM OF SCREEN 19 ft-bgs
END CAP/SUMP LENGTH 0.35 ft

GROUT

TOP DEPTH -1/2 ft-bgs
TYPE/BRAND Pre-mix concrete
QUANTITY USED ~1 bag
VOLUME FLUID USED
PLACEMENT METHOD Poured into borehole

BENTONITE SEAL

TOP DEPTH Surface
TYPE/BRAND Sinclair 3/8" TR30 bent pellets
QUANTITY USED 1 bucket
VOLUME FLUID USED 5 gallons of Distilled Water
SET-UP TIME
PLACEMENT METHOD Poured into borehole

TRANSITION SAND

TOP DEPTH
TYPE/BRAND
QUANTITY USED
PLACEMENT METHOD

SAND/GRAVEL PACK

TOP DEPTH 3 ft-bgs
TYPE/BRAND RMC #2/12
QUANTITY USED 4 bags (4 ft³)
PLACEMENT METHOD Through Auger

BOTTOM FILL

TOP DEPTH
TYPE/BRAND
QUANTITY USED
PLACEMENT METHOD

CONTRACTOR West Hazmat
EQUIPMENT CME 95
DRILL MTHD HSA
DIAMETER 8.75 inches
LOGGER GTY

NORTHING 2183285.78
EASTING 6037947.94
COORDINATE SYSTEM:
OCS Bechmark

REVIEWED 107

DEDICATED PUMP SYSTEM:

TYPE/BRAND:
MODEL:
CONTROLLER TYPE:

WELL COMP AG ASCONLFSB0202 04.GPJ GEOSYNTec.GDT 7/16/04



GEOSYNTEC CONSULTANTS

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(805) 897-3800

GS FORM:
WELL BORE 01/04

BOREHOLE LOG

BORING

MW-20

SHEET 2 OF 3

START DRILL DATE Feb 23, 04
FINISH DRILL DATE Feb 25, 04
LOCATION Huntington Beach, CA
PROJECT Ascon LF
NUMBER SB0202

ELEVATION DATA:
GROUND SURF. 24.94 ft
TOP OF CASING 27.43 ft
DATUM NAVD88

DEPTH (ft-bgs)	DESCRIPTION 1) Unit/Formation, Mem. 2) Soil/Rock Name 3) Color 4) Moisture 5) Grain Size 6) Percentage 7) Plasticity 8) Density/Consistency 9) Structure 10) Other (Mineralization, Discoloration, Odor, etc.)	GRAPHIC LOG	WELL LOG	GROUNDWATER OR STRUCTURE	ELEVATION (ft)	SAMPLE					COMMENTS 1) Rig Behavior 2) Air Monitoring	
						SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)		TIME (00:00)
35	@33.5'-color change to dark greenish grey [GLEY1 4/10Y]; increase in grain size fine- to medium-grained sand (0, 80, 20); micaceous; 5% shell fragments @36'-becomes very moist or saturated				-6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23 -24 -25 -26 -27 -28 -29 -30 -31 -32 -33 -34 -35	7 9 11 15 23 34 18 26 33 19 23 29 18 21 23 12 15 17 14 16 19 15 16 17 13 15 17 17 19 23		100 100 100 100 100 100 100 100 100 100 60 100	0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	09:36 09:40 09:46 09:50 08:42 08:49 08:55 09:03 09:06 09:13	@35.5'-Encountered groundwater. Stopped drilling: prepared for reaming with 13". Resumed drilling @ 08:35 on 25 February 2004	
45	<u>SAND (SP)</u> : dark greenish grey [GLEY1 4/10Y]; wet; fine sand (0, 100, TR); 5% shell fragments; micaceous; trace silts @46'-trace shell fragments; 5% fines (0, 95, 5)											
50	@52'-5% shell fragments; no hydrocarbon odor											
55	@55'-trace shell fragments											
60	@58'-increase in grain size to fine- to medium-grained sand; trace silts											

CONTRACTOR West Hazmat
EQUIPMENT CME 95
DRILL MTHD HSA
DIAMETER 8 inches
LOGGER GTY

NORTHING 2148281.27
EASTING 6037557.55
COORDINATE SYSTEM:
OCS Benchmark

REVIEWER IG7

NOTES:

WELL BORE ASCONLESB0202 04.GPJ GEOSYNTEC.GDT 7/19/04



GEOSYNTec CONSULTANTS

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Santa Barbara, CA 93101
(805) 897-3800

GS FORM:
WELL BORE 01/04

BOREHOLE LOG

BORING

MW-20

SHEET 3 OF 3

START DRILL DATE Feb 23, 04

ELEVATION DATA:

FINISH DRILL DATE Feb 25, 04

GROUND SURF. 24.94 ft

LOCATION Huntington Beach, CA

TOP OF CASING 27.43 ft

PROJECT Ascon LF

DATUM NAVD88

NUMBER SB0202

DEPTH (ft-bgs)	DESCRIPTION 1) Unit/Formation, Mem. 7) Plasticity 2) Soil/Rock Name 8) Density/Consistency 3) Color 9) Structure 4) Moisture 10) Other (Mineralization, 5) Grain Size Discoloration, Odor, etc.) 6) Percentage	GRAPHIC LOG	WELL LOG	GROUNDWATER OR STRUCTURE	ELEVATION (ft)	SAMPLE					COMMENTS 1) Rig Behavior 2) Air Monitoring	
						SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY (%)	PID READING (ppm)		TIME (00:00)
					-36							
					-37				100	0.0	09:22	
					-38							
					-39							
65	<u>Clayey SILT (CI-ML):</u> dark greenish grey [GLEY1 4/10Y]; silt with clay (0, TR, 100); moderately stiff; moderate high plasticity; trace fine sand; micaceous				-40			12	100	0.0	09:28	
	<u>SAND (SP):</u> dark greenish grey [GLEY1 4/10Y]; fine sand; trace silts (0, 100, TR); very micaceous; trace shell fragments				-41			14				
					-42			16				
	@67'-increase in silts (0, 95, 5); soft; low plasticity 5% shell fragments				-43			17	90	0.0	09:34	
					-44			19				
					-45			22				
70					-46			16	100	0.0	09:40	
					-47			17				
	<u>Silty SAND (SP-SM):</u> dark greensih grey [GLEY1 4/10Y]; fine sand with silt (0, 75, 25); low plasticity; very micaceous; trace shell fragments				-48			19				
	<u>Sandy SILT (SM):</u> dark greenish grey [GLEY1 4/10Y]; silt with some fine sand (0, 25, 75); micaceous; low plasticity				-49			10		0.0	10:05	
75					-50			12				
					-51			18				
					-52							
					-53							
					-54							
					-55							
					-56							
					-57							
					-58							
					-59							
					-60							
					-61							
					-62							
					-63							
					-64							
					-65							
												Stopped drilling on 25 February 2004 @ 10:05. Total depth = 74.5'.

Stopped drilling on 25
February 2004 @ 10:05.
Total depth = 74.5'.

CONTRACTOR West Hazmat
EQUIPMENT CME 95
DRILL MTHD HSA
DIAMETER 8 inches
LOGGER GTY

NORTHING 2148281.27
EASTING 6037557.55
COORDINATE SYSTEM:
OCS Benchmark
REVIEWER IGT

NOTES:

WELL BORE ASCONLFB0202_04.GPJ GEOSYNTec.CDT 7/19/04



GEOSYNTEC CONSULTANTS

924 Anacapa Street, Suite 4A
Santa Barbara, CA 93101
(805) 897-3800

GS FORM:
WELL COMP AG 01/04

WELL CONSTRUCTION LOG

BORING MW-20 SHEET 1 OF 1
START DRILL DATE Feb 23, 04 ELEVATION DATA:
FINISH DRILL DATE Feb 25, 04 GROUND SURF. 24.94 ft
LOCATION Huntington Beach, CA TOP OF CASING 27.43 ft
PROJECT Ascon LF DATUM NAVD88
NUMBER SB0202

DEPTH (ft-bgs)	COMMENTS	GRAPHIC LOG	WELL MATERIAL DEPTH (FT-BGS)	SURFACE COMPLETION:
	1) Groundwater 2) Surge Time 3) Dedicated Pump			TYPE 10" Steel Monument RISER HEIGHT 2.81 ft. RISER DIAM. 8.5 in. WELL CASING HEIGHT 2.42 ft. CONCRETE PAD SIZE
	8 5/8-inch steel conductor casing installed from 1 ft-bgs to 41 ft-bgs.			BORING DEPTH 74.5 ft-bgs ORIGINAL BORING DIAMETER 15 in. (0'-41') 8 5/8 in. (41'-74.5') REAM BORING DIAMETER
10				WELL CONSTRUCTION WELL CONSTRUCTION DATE Feb. 23-25, 2004 WELL DEPTH 74.5 ft-bgs WELL CASING DIAMETER 2 in. WELL CASING MATERIAL Sch40 PVC SCREEN SLOT SIZE/DIRECTION 0.020 in. TOP OF SCREEN 64 ft-bgs BOTTOM OF SCREEN 74 ft-bgs END CAP/SUMP LENGTH 0.35 ft
20				GROUT TOP DEPTH surface TYPE/BRAND Portland Type III cement with ~3% Hydrogel Bentonite QUANTITY USED 10 bags VOLUME FLUID USED ~160 gallons of water PLACEMENT METHOD Through Auger with tremie pipe
30				BENTONITE SEAL TOP DEPTH 57 ft-bgs TYPE/BRAND Sinclair 3/8" bent. pellets QUANTITY USED 2.5 buckets VOLUME FLUID USED SET-UP TIME PLACEMENT METHOD Through Auger
40				TRANSITION SAND TOP DEPTH TYPE/BRAND QUANTITY USED PLACEMENT METHOD
50				SAND/GRAVEL PACK TOP DEPTH 61 ft-bgs TYPE/BRAND RMC #2/12 QUANTITY USED 4 bags (4 ft³) PLACEMENT METHOD Through Auger
60				BOTTOM FILL TOP DEPTH TYPE/BRAND QUANTITY USED PLACEMENT METHOD
70				
80				
90				
100				

CONTRACTOR West Hazmat
EQUIPMENT CME 95
DRILL MTHD HSA
DIAMETER 8 inches
LOGGER GTY

NORTHING 2148281.27
EASTING 6037557.55
COORDINATE SYSTEM:
OCS Benchmark
REVIEWER 1027

DEDICATED PUMP SYSTEM:
TYPE/BRAND:
MODEL:
CONTROLLER TYPE:

ATTACHMENT E
WELL DEVELOPMENT LOGS

GEOSYNTEC CONSULTANTS		PROJECT NAME <u>Ascon</u>		WELL NO. <u>AW-1A</u>
		PROJECT NO. <u>SBO202</u>		PREPARED BY <u>L. Morales</u>
WELL DEVELOPMENT LOG		SITE <u>Huntington Beach</u>		
		METHOD PUMP <u>Ground Rod of 1/2"</u> BAILER <u>Stainless</u> OTHER _____		
DEVELOPMENT CRITERIA <u>18% of previous pH, Spec Cond, Turbidity & Temperature within reading or 10 turb = < 5 NTU</u>		REMARKS <u>2 cycles of Swabbing: 20" strokes for 30 strokes then advance from top of water column to bottom of well screen.</u>		

WELL CONSTRUCTION DATA (ft)

WELL CASING:

TOP OF CASING HEIGHT/DEPTH (TOC) = _____

INSIDE DIAM d_{wID} = 0.172

OUTSIDE DIAM d_{wOD} = 0.197

HOLE DIAMETER d_h = _____

DEPTH TO:

SCREENED INTERVAL _____ TO _____

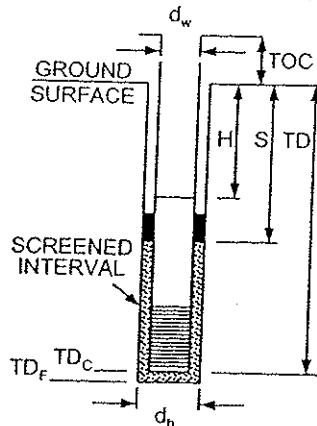
WATER LEVEL H = 12.06

BASE OF SEAL S = _____

BASE OF CASING TD_c = 21.34

BASE OF FILTER PACK TD_f = _____

ESTIMATED FILTER PACK POROSITY P = 0.25



WELL VOLUME CALCULATION

CASING VOLUME =

$$V_c = \pi \left(\frac{d_{wID}}{2} \right)^2 (TD_c - H) = 3.14 \left(\frac{0.172}{2} \right)^2 (21.34 - 12.06) = 0.216 \text{ ft}^3$$

FILTER PACK PORE VOLUME =

$$V_f = \pi \left[\left(\frac{d_h}{2} \right)^2 - \left(\frac{d_{wOD}}{2} \right)^2 \right] (TD_f - (S \text{ or } H)) (P)$$

$$= 3.14 \left[\left(\frac{0.197}{2} \right)^2 - \left(\frac{0.172}{2} \right)^2 \right] (21.34 - 12.06) (0.25) = 0.216 \text{ ft}^3$$

(if $S > H$, use S . If $S < H$, use H)

TOTAL WELL VOLUME =

$$V_T = V_c + V_f = 0.216 \text{ ft}^3 \times 7.48 = 1.61 \text{ GAL}$$

DEVELOPMENT LOG

TOTAL

WATER QUALITY

COMMENTS

DATE	TIME	FLOW RATE (gpm)	DEPTH TO WATER (ft-btoc)	WATER REMOVED (gal)	WATER REMOVED (gal)	pH	SPECIFIC CONDUCTIVITY (mS/cm)	TURBIDITY (NTU)	TEMPERATURE (Degrees C)	COMMENTS
3/4/09	0755	-		2	2					
	0820									
	0840			8	10					
	0850	-	12.13	-	10					
	0853	1	12.71							
	0900	1	12.80	10	20	7.94	16.2	616	19.1	
	0905	1	12.80	5	25	8.01	16.1	537	19.2	
	0910	2	13.55	10	35	7.90	16.2	546	19.2	
	0915	2	13.55	10	45	7.93	16.4	451	19.2	
	0920	2	13.55	10	55	7.91	16.4	375	19.2	
	0925	2	13.55	10	65	7.89	16.5	323	19.2	
	0930	3	14.22	15	80	7.86	16.5	279	19.3	
	0935	3	14.22	15	95	7.84	16.6	284	19.3	
	0937									
	0938		12.95							
	0939		12.45							
	0940		12.25							
	0941		12.19							
				95	160					

Developer: Rich Reynolds of Gregg & Sita
IRMS/WELL DEVELOPMENT LOG



WELL DEVELOPMENT LOG

PROJECT NAME

100

PROJECT NO.

507

SITE

Huntington Beach

WELL NO

AWCA

PREPARED BY

L. Morales

METHOD

PUMP 2" Ground Loss Rediff

BAILER *Shirley*

OTHER

DEVELOPMENT CRITERIA

within 10% of previous reading

REMARKS

then advance from top of water column to bottom of well screen

WELL CONSTRUCTION DATA (ft)

WELL CASING:

TOP OF CASING HEIGHT/DEPTH (TOC)

INSIDE DIAM $d_{wID} = 0.172$

OUTSIDE DIAM $d_{wOD} = 0.197$

HOLE DIAMETER d_h =

DEPTH TO:

SCREENED INTERVAL TO

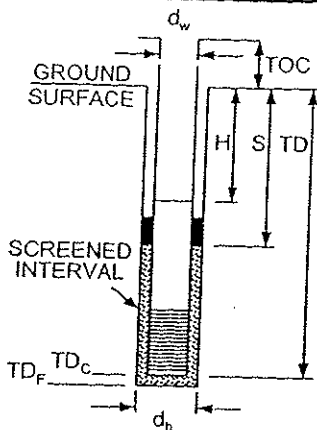
WATER LEVEL H = 8.32

BASE OF SEAL S = ~~18.60~~

BASE OF CASING $TD_C = 18.60$

BASE OF FILTER PACK $TD_F =$

ESTIMATED FILTER PACK POROSITY $P = 0.25$



WELL VOLUME CALCULATION

CASING VOLUME =

$$V_c = \pi \left(\frac{d_w ID}{2} \right)^2 (TD_c - H) = 3.14 \left(\frac{0.112}{2} \right)^2 (18.6 - 8.32) = 0.24 \text{ m}^3$$

FILTER PACK PORE VOLUME =

$$V_f = \pi \left[\left(\frac{d_h}{2} \right)^2 - \left(\frac{d_{rOD}}{2} \right)^2 \right] (TD_f - (S \text{ or } H))(P)$$

$$= 3.14 \left[\left(\frac{\quad}{2} \right)^2 - \left(\frac{\quad}{2} \right)^2 \right] (\quad - \quad) = \quad \text{ft}^3$$

(if $S > H$, use S . If $S < H$, use H)

TOTAL WELL VOLUME =

$$V_T = V_c + V_f = \quad + \quad = 0.24 \text{ ft}^3 \times 7.48 = 1.79 \text{ GAL}$$

DEVELOPMENT LOG

TOTAL

WATER QUALITY

[illegible]

GEOSYNTEC CONSULTANTS PROJECT NAME Ascon WELL NO. B-4A

WELL DEVELOPMENT LOG PROJECT NO. SBO202 SITE Huntington Beach PREPARED BY L. Morales

METHOD 2" Grounding Rods DEVELOPMENT CRITERIA pH, temperature, specific conductivity and turbidity within 10% of previous reading

PUMP Stainless Steel REMARKS Surged through water column - 20" strokes at 30 strokes then advance through to bottom -> Bail after 2 internal cycles

BAILER Stainless Steel

OTHER _____

WELL CONSTRUCTION DATA (ft)

WELL CASING:

TOP OF CASING HEIGHT/DEPTH (TOC) = _____

INSIDE DIAM $d_w ID = 0.172'$

OUTSIDE DIAM $d_w OD = 0.198'$

HOLE DIAMETER $d_h =$ _____

DEPTH TO:

SCREENED INTERVAL _____ TO _____

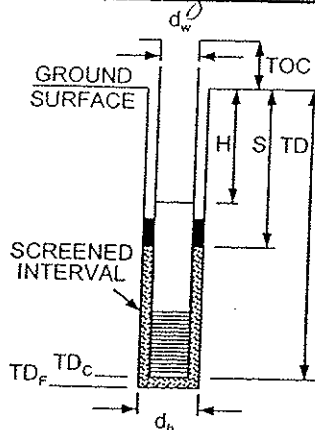
WATER LEVEL $H = 21.24'$

BASE OF SEAL $S =$ _____

BASE OF CASING $TD_c = 33.65'$

BASE OF FILTER PACK $TD_f =$ _____

ESTIMATED FILTER PACK POROSITY $P = 0.25$



WELL VOLUME CALCULATION

CASING VOLUME =

$$V_c = \pi \left(\frac{d_w ID}{2} \right)^2 (TD_c - H) = 3.14 \left(\frac{0.172}{2} \right)^2 (33.65 - 21.24) = 0.286 \text{ ft}^3$$

FILTER PACK PORE VOLUME =

$$V_f = \pi \left[\left(\frac{d_h}{2} \right)^2 - \left(\frac{d_w OD}{2} \right)^2 \right] (TD_f - (S \text{ or } H)) (P)$$

$$= 3.14 \left[\left(\frac{0.198}{2} \right)^2 - \left(\frac{0.172}{2} \right)^2 \right] (33.65 - 21.24) (0.25) = 0.286 \text{ ft}^3$$

(If $S > H$, use S . If $S < H$, use H)

TOTAL WELL VOLUME =

$$V_T = V_c + V_f = 0.286 \text{ ft}^3 \times 7.48 = 2.15 \text{ GAL}$$

DEVELOPMENT LOG

TOTAL

WATER QUALITY

DATE	TIME	FLOW RATE (gpm)	DEPTH TO WATER (ft-bloc)	WATER REMOVED (gal)	WATER REMOVED (gal)	pH	SPECIFIC CONDUCTIVITY (mS/cm)	TURBIDITY (NTU)	TEMPERATURE (Degrees C)	COMMENTS
03-03-04	0940			2	2	7.49	52.1	799	20.3	Begin surging
	1000									Begin bailing
	1018		21.35	4.5	6.5					Shut on water-HC color
	1020									Begin surging
	1039									
	1041									Begin Bailing
	1055		21.35	7.5	13.5					Set pump 2' from bottom
	1110									Begin pumping at ~1 gpm
	1114	1	21.75	7	20.5	7.49	52.1	799	20.3	
	1122	1	21.76	5	25.5	8.0	32.0	795	20.5	Strong H-C color
	1127	1	21.76	5	30.5	7.98	31.6	474	20.6	
	1132	1	21.76	5	35.5	7.99	31.8	408	20.6	
	1137	1	21.76	5	40.5	7.97	31.8	372	20.7	
	1147	1	21.75	10	50.5	7.93	31.8	294	20.6	
	1157	1	21.75	10	60.5	7.93	31.9	239	20.6	
	1207	1	21.75	10	70.5	7.90	32.0	87	20.6	
	1217	1	21.75	10	80.5	7.88	32.1	67	20.6	
	1222	1	21.75	10	90.5	7.88	32.1	120	20.6	Stop surging
	1235	0	21.31							DTB-34.70' bloc
There were air bubbles in the water that may have kept the turbidity readings from stabilizing. They jumped around a bit during pump.										

Developer: Rich Reynolds of Gregg Drilling

GEOSYNTEC CONSULTANTS

WELL DEVELOPMENT LOG

PROJECT NAME: Ascon

PROJECT NO.: SB0202

SITE: Huntington Beach

WELL NO.: MW-19

PREPARED BY: L. Morales

METHOD: 2" Grundfos Redflo

PUMP: Stainless

BAILER: Stainless

OTHER:

DEVELOPMENT CRITERIA: pH, Cond, turbidity, Temp within 10% of previous reading or Turbidity < 5 NTU

REMARKS: 2 cycles of Swabbing: 20" strokes for 30 strokes then advance from top of water column to bottom of screen

WELL CONSTRUCTION DATA (ft)

WELL CASING:

TOP OF CASING HEIGHT/DEPTH (TOC) =

INSIDE DIAM $d_wID = 0.172$

OUTSIDE DIAM $d_wOD = 0.197$

HOLE DIAMETER $d_h =$

DEPTH TO:

SCREENED INTERVAL TO

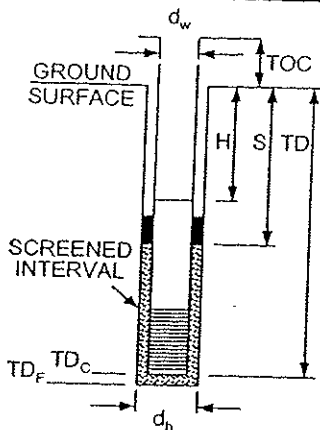
WATER LEVEL $H = 4.86'$

BASE OF SEAL $S = 16.25'$

BASE OF CASING $TD_c = 16.25'$

BASE OF FILTER PACK $TD_F =$

ESTIMATED FILTER PACK POROSITY $P = 0.25$



WELL VOLUME CALCULATION

CASING VOLUME =

$$V_c = \pi \left(\frac{d_wID}{2} \right)^2 (TD_c - H) = 3.14 \left(\frac{0.172}{2} \right)^2 (16.25 - 4.86) = 0.33 \text{ ft}^3$$

FILTER PACK PORE VOLUME =

$$V_f = \pi \left[\left(\frac{d_h}{2} \right)^2 - \left(\frac{d_wOD}{2} \right)^2 \right] (TD_F - (S \text{ or } H)) (P)$$

$$= 3.14 \left[\left(\frac{\quad}{2} \right)^2 - \left(\frac{\quad}{2} \right)^2 \right] (\quad - \quad) (\quad) = \quad \text{ft}^3$$

(If $S > H$, use S . If $S < H$, use H)

TOTAL WELL VOLUME =

$$V_T = V_c + V_f = \quad + \quad = 0.33 \text{ ft}^3 \times 7.48 = 2.45 \text{ GAL}$$

DEVELOPMENT LOG

TOTAL

WATER QUALITY

COMMENTS

DATE	TIME	FLOW RATE (gpm)	DEPTH TO WATER (ft-bloc)	WATER REMOVED (gal)	WATER REMOVED (gal)	pH	SPECIFIC CONDUCTIVITY (mS/cm)	TURBIDITY (NTU)	TEMPERATURE (Degrees C)	COMMENTS
3/4/04	1200			2	2					Pre-swab bail
	1205									Begin Swabbing
	1240	-	5.00	11	13					get pump ready begin (2' from bottom)
	1250	2	-	-	13					Begin Purge
	1255	2	5.10	10	23	7.58	15.1	2929	21.1	
	1300	2	5.70	10	33	7.62	15.1	2999	21.1	
	1305	2	5.70	10	43	7.57	15.1	969	21.1	
	1310	2	5.70	10	53	7.53	15.0	785	21.2	increase flow rate to 3 gpm
	1315	3	6.28	15	68	7.53	14.8	547	21.3	
	1320	3	6.29	15	80	7.53	15.0	480	21.4	
	1325	3	6.28	15	95	7.41	15.1	149	21.4	Shut down
	1328	-		5	100					

GEOSYNTEC CONSULTANTS		PROJECT NAME <u>Ascon</u>		WELL NO. <u>MW-20</u>
WELL DEVELOPMENT LOG		PROJECT NO. <u>SB0202</u>	SITE <u>Huntington Beach</u>	PREPARED BY <u>L. Morales</u>
METHOD PUMP <u>2" Ground Rods</u> BAILER <u>Stainless</u> OTHER _____		DEVELOPMENT CRITERIA <u>Within 10% of previous Reading</u>		
REMARKS				

WELL CONSTRUCTION DATA (ft)

WELL CASING:

TOP OF CASING HEIGHT/DEPTH (TOC) = _____

INSIDE DIAM $d_{wID} = \underline{0.172}$

OUTSIDE DIAM $d_{wOD} = \underline{0.198}$

HOLE DIAMETER $d_h = \underline{\hspace{1cm}}$

DEPTH TO:

SCREENED INTERVAL _____ TO _____

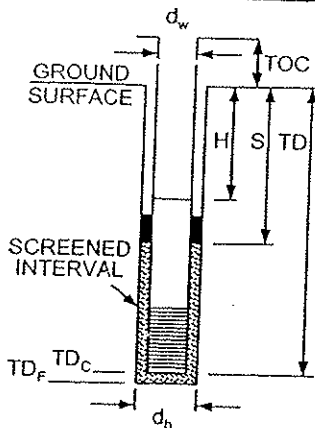
WATER LEVEL $H = \underline{26.15'}$

BASE OF SEAL $S = \underline{\#}$

BASE OF CASING $TD_c = \underline{73.21'}$

BASE OF FILTER PACK $TD_F = \underline{\hspace{1cm}}$

ESTIMATED FILTER PACK POROSITY $P = \underline{0.25}$



WELL VOLUME CALCULATION

CASING VOLUME =

$$V_c = \pi \left(\frac{d_{wID}}{2} \right)^2 (TD_c - H) = 3.14 \left(\frac{0.172}{2} \right)^2 (73.21 - 26.15) = 1.09 \text{ ft}^3$$

FILTER PACK PORE VOLUME =

$$V_f = \pi \left[\left(\frac{d_h}{2} \right)^2 - \left(\frac{d_{wOD}}{2} \right)^2 \right] (TD_f - (S \text{ or } H)) (P)$$

$$= 3.14 \left[\left(\frac{\hspace{1cm}}{2} \right)^2 - \left(\frac{\hspace{1cm}}{2} \right)^2 \right] (\hspace{1cm} - (\hspace{1cm} \text{ or } \hspace{1cm})) = \hspace{1cm} \text{ ft}^3$$

(if $S > H$, use S . If $S < H$, use H)

TOTAL WELL VOLUME =

$$V_t = V_c + V_f = \hspace{1cm} + \hspace{1cm} = 1.09 \text{ ft}^3 \times 7.48 = \underline{8.18} \text{ GAL}$$

DEVELOPMENT LOG

TOTAL

WATER QUALITY

COMMENTS

DATE	TIME	FLOW RATE (gpm)	DEPTH TO WATER (ft-bloc)	WATER REMOVED (gal)	WATER REMOVED (gal)	pH	SPECIFIC CONDUCTIVITY (mS/cm)	TURBIDITY (NTU)	TEMPERATURE (Degrees C)	COMMENTS
3-3-04	1400	bail	sediments off bottom							After bailing 4 gallons
	1418									Begin surging at ~ 61' - 2 cycles to bottom of 28" advances
	1437	bail		7						
	1450	-								Begin surging - 1 cycle
	1500	-	26.74							
	1525	-	26.38							DTW BTWC 77.10'
	1528	0.8	31.90	2.4	9.4					
	1535	0.8	32.78	5.6	15	6.44	8.09	>999	21.4	
	1540	0.8	33.13	4	19	7.73	8.16	>999	21.3	
	1545	0.8	33.50	4	23	7.86	8.21	>999	21.3	
	1550	0.8	33.50	4	27	7.88	8.30	>999	21.2	
	1555	0.8	33.51	4	31	7.87	8.32	>999	21.2	
	1605	0.8	33.65	8	39	7.87	9.31	>999	21.2	
	1615	0.8	33.68	8	47	7.85	8.31	>999	21.1	
	1625	0.8	33.72	8	55	7.83	8.28	864	21.1	
	1635	0.8	33.74	8	63	7.82	8.21	877	21.0	Raised pump 10'
	1645	0.8	33.87	8	71	7.83	8.10	858	21.0	
	1650	3	47.30	15	86	7.82	8.20	702	20.9	lowered pump 10' increased flow rate
	1705	3	50.66	45	131	7.77	8.21	729	20.9	
	1718	2.35	51.15	13	144	7.77	8.22	519	20.8	
	1715	2.75	51.24	13	157	7.76	8.25	466	20.8	
	1720	2.5	51.32	13	170	7.77	8.29	438	20.8	
	1723		51.80							Shut down
	1724		30.40							

Developer: Rich Reynolds of Gregg Drilling