		<b>CONESTOGA-ROVERS</b> & ASSOCIATES	Emeryville,	Street, Suite A California 94608 (510) 420-0700 Fax: (510) 420-9170 rorld.com
	•	TRANS	MITTAL	
Date: Jul	y 19		ence No.: ct Name:	240898 510 East 14th Street (506-510 International Boulevard), Oakland
To: Jer	ry V	lickham		RECEIVED
Ala	ame	da County Environmental Health		
113	31 H	arbor Bay Parkway, Suite 250		11:13 am, Jul 21, 2010
Ala	ame	da, California 94502-6577		Alameda County Environmental Health
Please find enc Sent via:		d: Draft Arrows Draft Arrows Draft Arrows Driginals Drig	Final Other Same Day Co Other <u>Geo</u>	urier Tracker and Alameda County FTP
QUANTIT	Y		DESCRIPT	TION
1		Well Destruction Work Plan		·
<ul><li>As Reque</li><li>For Your</li></ul>		For Review a	and Comment	
COMMENTS If you have ar (510) 420-3319	ny qu	testions regarding the contents of th	is document,	please call Peter Schaefer at
Copy to:		Denis Brown, Shell Oil Products US	(electronic c	opy)
2 V		SF Data Room (electronic copy)	1	
Completed by	7:	Peter Schaefer	Signed: $\frac{1}{4}$	ath Schif-
Filing: Corre	espo	ndence File	1	



Denis L. Brown Shell Oil Products US HSE – Environmental Services 20945 S. Wilmington Ave. Carson, CA 90810-1039 Tel (707) 865 0251 Fax (707) 865 2542 Email denis.1.brown@shell.com

Jerry Wickham Alameda County Environmental Health 1131 Harbor Bay Parkway, Suite 250 Alameda, California 94502-6577

Re: Shell-branded Service Station 510 East 14<sup>th</sup> Street (506-510 International Boulevard) Oakland, California SAP Code 135695 Incident No. 97601734 ACEH Case No. RO0002853

Dear Mr. Wickham:

The attached document is provided for your review and comment. Upon information and belief, I declare, under penalty of perjury, that the information contained in the attached document is true and correct.

If you have any questions or concerns, please call me at (707) 865-0251.

Sincerely,

Denis L. Brown Project Manager



# WELL DESTRUCTION WORK PLAN

### SHELL-BRANDED SERVICE STATION 510 EAST 14TH STREET (506-510 INTERNATIONAL BOULEVARD) OAKLAND, CALIFORNIA

SAP CODE	135695
INCIDENT NO.	97601734
AGENCY NO.	RO0002853

### Prepared by: Conestoga-Rovers & Associates

5900 Hollis Street, Suite A Emeryville, California U.S.A. 94608

Office: (510) 420-0700 Fax: (510) 420-9170

web: http://www.CRAworld.com

JULY 19, 2010 REF. NO. 240898 (7) This report is printed on recycled paper.

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### 1.0 <u>INTRODUCTION</u>

Conestoga-Rovers & Associates (CRA) prepared this work plan on behalf of Equilon Enterprises LLC dba Shell Oil Products US (Shell). The proposed well destructions are required for final case closure per Alameda County Environmental Health's (ACEH's) June 11, 2010 letter.

The subject site is an active Shell-branded service station located on the east corner of the International Boulevard (formerly East 14<sup>th</sup> Street) and 5<sup>th</sup> Avenue intersection in a mixed commercial and residential area of Oakland, California (Figure 1). The site layout (Figure 2) includes one station building, three dispenser islands, and three underground storage tanks (USTs).

### 2.0 WORK TASKS

### 2.1 <u>PERMIT</u>

CRA will obtain an appropriate permit from Alameda County Public Works Agency.

### 2.2 <u>HEALTH AND SITE SAFETY PLAN (HASP)</u>

CRA will prepare a HASP to protect site workers. The plan will be kept on site during field activities and will be reviewed and signed by each site worker.

### 2.3 <u>UTILITY CLEARANCE</u>

CRA will mark the well locations, and the locations will be cleared through Underground Service Alert and a private line locator prior to removing the well boxes.

### 2.4 <u>MONITORING WELL DESTRUCTION</u>

CRA proposes to properly destroy five monitoring wells (MW-1 through MW-5). The wells will be destroyed by backfilling with neat cement under pressure (pressure grouting). The well vaults will be removed, and the surface pavement patched with concrete to match the surrounding grade. CRA includes the well logs in Appendix A.

The proposed scope of work will be performed under the supervision of a professional geologist or engineer.

### 2.5 <u>REPORT PREPARATION</u>

Following completion of the well destructions, CRA will submit a brief report documenting the activities.

### 3.0 <u>SCHEDULE</u>

CRA will implement the well destructions upon receipt of the appropriate permit and will provide ACEH a report detailing the well destructions by September 28, 2010.

All of Which is Respectfully Submitted, CONESTOGA-ROVERS & ASSOCIATES

Peter Sa

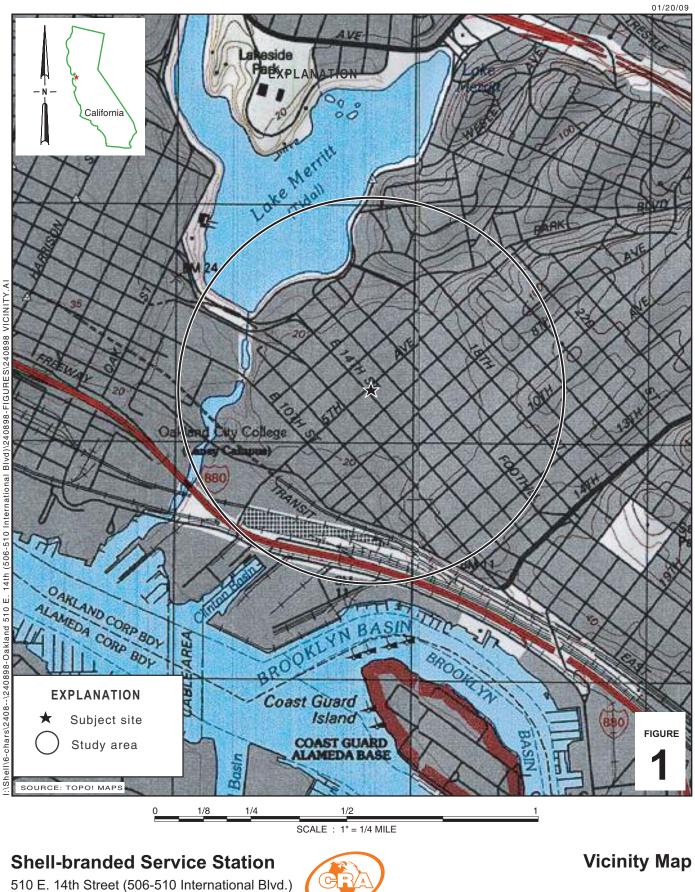
Peter Schaefer, CEG, CHG

Anney K

Aubrey K. Cool, PG

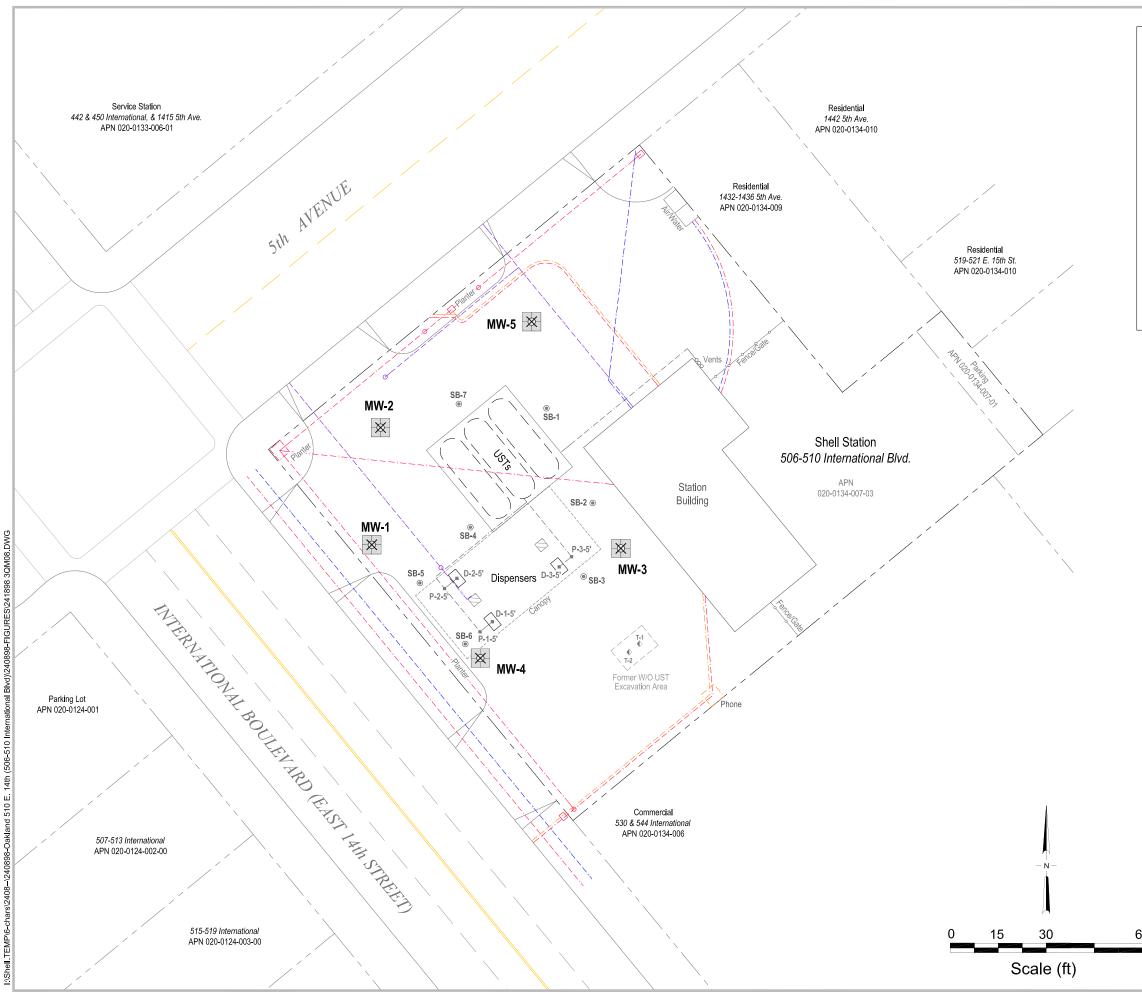


FIGURES



510 E. 14th Street (506-510 Internat Oakland, California





60

06/17/10

		EXPLANATION
MW-1	×	Monitoring well location, proposed for destruction
SB-1	۲	Soil boring location (10/18-19/05)
D-1-5'		Soil and groundwater sample location (7/22/04)
T-1	♦	Soil sample location (1993)
t t		Electrical line (E)
r		Telecommunication line (T)
	- <u> </u>	Sanitary sewer line (SAN)
*_	*	Water line (W)
	,	Product piping line (P)
	- <u> </u>	Vent line (V)

Site Plan



# Shell-branded Service Station 510 East 14th Street (506-510 International Boulevard) Oakland, California

FIGURE



APPENDIX A

WELL LOGS



Cambria Environmental Technology, Inc. 5900 Hollis Street, Suite A Emeryville, CA 94608 Telephone: 510-420-0700 Fax: 510-420-9170

## **BORING/WELL LOG**

CLIENT NAME	Shell Oil Products US	BORING/WELL NAME
JOB/SITE NAME	506-510 International Blvd	DRILLING STARTED 26-Jul-06
LOCATION	Oakland, CA	DRILLING COMPLETED 28-Jul-06
PROJECT NUMBER	248-0898-006	WELL DEVELOPMENT DATE (YIELD) 25-Aug-06 (64 gallons)
DRILLER	Gregg Drilling	GROUND SURFACE ELEVATION 31.13 ft above msl
DRILLING METHOD_	Hollow-stem auger	TOP OF CASING ELEVATION 30.85 ft above msl
BORING DIAMETER	10"	SCREENED INTERVAL 18 to 21 ft bgs
LOGGED BY	B. DeBoer	DEPTH TO WATER (First Encountered) 18.5 ft (28-Jul-06)
REVIEWED BY	A. Friel	DEPTH TO WATER (Static) 10.98 ft (29-Aug-06)
REMARKS	Hand Augered to 10 fbg	

CONTACT DEPTH (ft bgs) SAMPLE ID GRAPHIC LOG PID (ppm) BLOW U.S.C.S. DEPTH (ft bgs) EXTENT LITHOLOGIC DESCRIPTION WELL DIAGRAM Sandy SILT (ML); black (10yr 2/1); dry; 10% clay, 60% slit, 30% sand; medium plasticity. 04406 DEFAULT.GDT ML 4.0 BLVD.GPJ CLAY (CL); dark brown (10yr 3/3); dry; 60% clay, 40% silt; high plasticity. 5 0 MW-1 5 BLVD)/GINT/506-510 INTERNATIONAL @ 6 fbg <u>Gravelly CLAY (CL</u>)dark yellowish brown (10yr 3/4); dry; 40% clay, 10% silt, 10% fine grained sand, 40% fine grained gravel; low plasticity. Portland Type CL Ľ I/II Cement 10.0 <u>SILT (ML);</u> dark greenish gray (gley1 4/5gy); moist; 40% clay, 50% silt, 10% very fine grained sand; medium 8 MW-1-10 0 8 T ML 9 plasticity. 8 12.0 MELL LOG (PID) 1/10CAMENVDC/SONOMA SHELLIOAKLAND 506 E 14TH (506-510 INTERNATIONAL CLAY (CL); grayish brown (10yr 5/2); dry; 70% clay, 30% silt; high plasticity. 7 11 5 6 9 6 15 Bentonite Seal 8 0 MW-1 15 CL 9 4 6 Monterey Sand #2/12 8 4 4 <u>⊽</u>\_18.5 6 Sandy SILT (ML) dark yellowish brown (10yr 4/6); moist; 10% clay, 55% silt, 35% fine grained sand; medium ML 19.0 4 Monterey plasticity 6 SM Sand #2/12 20 Silty SAND (SM); yellowish brown (10yr 5/4); wet; 20% silt, 60% fine grained sand; low plasticity. 6 0 MW-1 20 7 21.0 SILT (ML); dry; 30% clay, 60% slit, 10 % fine grained sand; medium plasticity 10 12 Monterey 6 Sand #2/12 ML 7 8 4 Bentonite Seal 24.0 5 CLAY (CL); dry; 60% clay; 40% silt; high plasticity. CL 7 25.0 25 Bottom of Boring @ 25 ft PAGE 1 OF



**CLIENT NAME** 

LOCATION

DRILLER

LOGGED BY \_\_\_\_

REMARKS

JOB/SITE NAME

PROJECT NUMBER

DRILLING METHOD

BORING DIAMETER

Cambria Environmental Technology, Inc. 5900 Hollis Street, Suite A Emeryville, CA 94608 Telephone: 510-420-0700 Fax: 510-420-9170

Shell Oil Products US

Oakland, CA

248-0898-006

Gregg Drilling

10" B. DeBoer

A. Friel

Hollow-stem auger

Hand Augered to 10 fbg

506-510 International Blvd

 BORING/WELL NAME	MW-2		
 DRILLING STARTED	26-Jul-06		
 DRILLING COMPLETED			
 WELL DEVELOPMENT D	ATE (YIELD)	25-Aug-06 (93 gallons)	
 GROUND SURFACE ELE	VATION	31.46 ft above msi	
TOP OF CASING ELEVA	TION 30.96 ft a	above msl	
 SCREENED INTERVAL	14 to 24	ft bgs	
 DEPTH TO WATER (First			Ţ
DEPTH TO WATER (Stat		9.91 ft (29-Aug-06)	Y.

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM	
DEFAULT GDT 10/406					ML		<u>SILT (ML);</u> dark yellowish brown (10yr 4/4); dry; 10% clay, 80% slit, 10% sand. @ 2 fbg <u>Sandy SILT (ML);</u> dark yellowish brown (10yr 4/4); dry; 70% slit, 30% sand; low plasticity.	4.0		
NATIONAL BLVD.GPJ		MW-2 5'		- 5-	CL		<u>CLAY (CL);</u> dark greenish gray (gley1 4/5g); dry; 80% clay, 20% silt; high plasticity. <u>SILT (ML)</u> ; greenish gray (gley1 5/10gy); dry; 15% clay, 75% silt, 10% fine grained sand; low plasticity.	6.0	Portland T) I/II Cement	ypė
D)IGINTI506-510 INTER	4	MW-2 10'	×		ML				Bentonite S	Paul
DINTERNATIONAL BLV	9 7 10 13 9 13 15		XXXXXXXX		<u>CH</u> SW		@12.5 fbg <u>SILT With Sand (ML);</u> greenish gray (gley1 6/10gy); dry; 80% silt, 20% fine grained sand; low plasticity. CLAY (CH)dry; 60% clay, 40% silt; high plasticity	13.0 13.5	Monterey Sand #2/12	
WELL LOG (PID) NTOCAMENVDCISONOMA SHELTIOARLAND 506 E 14TH (506-510 INTERNATIONAL BLVD)/GINTI506-510 INTERNATIONAL BLVD.GPJ DEFAULT GDT 10406	11 17 19 11 18 17 5 7	MW-2 15'	X XXXXXXX		SM		Well Graded SAND With Gravel (SW) Moist; 85% sand, 15% fine grained gravel. @ 14 fbg; wet Silty SAND With Gravel (SM) 15% silt, 70% sand, 15% gravel. @16.5 fbg; Silty SAND (SM); wet; 10% clay, 30% silt, 50% sand, 10 % gravel; low plasticity. Silt With SAND (ML) dark gray (10yr 4/1); moist; 15%	15.5 17.0		
SONOMA SHELLIDAR	10 7 9 10 7 9 10						clay, 60% silt, 25% fine grained sand; high plasticity. <u>Well Graded SAND With Silt (SW-SM</u> )wet; 10% silt, 80% medium grained sand, 10% fine grained gravel. @21 fbg; 10% silt, 90% fine grained sand.	20.0	Monterey Sand #2/1	2
(PID) NIOCAMENVDCI	7 9 12		XXXXXXX		SW SM		@22 fbg; 20% silt, 80% medium grained sand.	25.0	Bottom of Boring @	
MELL LOG									25 ft PAGE 1	OF 1



Cambria Environmental Technology, Inc. 5900 Hollis Street, Suite A Emeryville, CA 94608 Telephone: 510-420-0700 Fax: 510-420-9170

CLIENT NAME	Shell Oll Products US	BORING/WELL NAME <u>MW-3</u>
JOB/SITE NAME	506-510 International Blvd	DRILLING STARTED
LOCATION	Oakland, CA	DRILLING COMPLETED 28-Jul-06
PROJECT NUMBER	248-0898-006	WELL DEVELOPMENT DATE (YIELD) 25-Aug-06 (114 gallons)
DRILLER	Gregg Drilling	GROUND SURFACE ELEVATION 32.41 ft above msl
DRILLING METHOD	Hollow-stem auger	TOP OF CASING ELEVATION 32.02 ft above msi
BORING DIAMETER_	10"	SCREENED INTERVAL 19 to 29 ft bgs
LOGGED BY	B. DeBoer	DEPTH TO WATER (First Encountered) 19.0 ft (28-Jul-06)
REVIEWED BY	A. Friel	DEPTH TO WATER (Static) 10.00 ft (29-Aug-06)
REMARKS	Hand Augered to 10 fbg	

Lithorogic description (ppm) County (ppm) Co	AGRAM
Bit T (ML): black (10yr 2/1); dry; 10% clay, 80% slit, medium plasticity.         Al.           0         ML         @ 3 fbg; very dark gray (10yr 3/1); dry; 30% clay, 70% slit; medium plasticity.         A.0           0         MW-3 gr         -5         CL         CLAY(CL); dry; 70% slit; 10% slit, 30% dire grained sand; high plasticity.         A.0           0         MW-3 gr         -5         CL         CLAY(CL); dry; row motiling; brown (10yr 4/3); dry; 70% clay, 30% slit; high plasticity.         7.0           0         MW-3 fbr         SiLT (ML); dark yellowish brown (10yr 4/4); dry; 10% clay, 30% slit; high plasticity.         8.0           0         MW-3 fbr         CLAY(CL); dor; grayish green (gley1 4/5g); dry; 40% clay, 60% slit; high plasticity.         10.0           0         MW-3 fbr         -0         CLAY(CL); dry; 70% clay, 30% slit; medium plasticity.         10.0           0         MW-3 fbr         -0         CLAY(CL); dry; 70% clay, 30% slit; medium plasticity.         10.0           0         Sitty SAND (SM) wei; 20% slit, fing grained 80% sand; fow plasticity.         15.0         15.0           0         Sitty SAND (SM) 100% medium/iccarse grained sand.         21.0         21.0           11         MW-3 fbr         -0         Sitty SAND (SM) 100% medium/iccarse grained sand.         22.0           12         Sitty SAND (SM) 100% medium/	Fortland Type II Cement Rentonite Seal Aonterey Sand #2/12 Monterey Sand #2/12



Cambria Environmental Technology, Inc. 5900 Hollis Street, Suite A Emeryville, CA 94608 Telephone: 510-420-0700 Fax: 510-420-9170

CLIENT NAME	Shell Oil Products US	BORING/WELL NAME MW-4					
JOB/SITE NAME	506-510 International Blvd	DRILLING STARTED	· · · · · · · · · · · · · · · · · · ·				
LOCATION	Oakland, CA	DRILLING COMPLETED 28-Jul-06					
PROJECT NUMBER	248-0898-006	WELL DEVELOPMENT DATE (YIELD) 25-Aug-06 (39 gallo	ons)				
DRILLER	Gregg Drilling	GROUND SURFACE ELEVATION 31.31 ft above msl					
DRILLING METHOD	Hollow-stem auger	TOP OF CASING ELEVATION 31.10 ft above mst					
BORING DIAMETER	10"	SCREENED INTERVAL 18 to 21.5 ft bgs					
LOGGED BY	B. DeBoer	DEPTH TO WATER (First Encountered) 19.0 ft (28-Jul-06	3) ∑				
REVIEWED BY	A. Friel	DEPTH TO WATER (Static) 9.91 ft (29-Aug-	)6) 🗸				
REMARKS	Hand Augered to 10 fbg		<u> </u>				

	PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
DOSONOMA SHELLIOAN, AND 508 E. 14TH (508-510 INTERNATIONAL BLVD)IGINTI505-510 INTERNATIONAL BLVD.GPJ DEFAULT.GDT 10/4/05	0	7 9 10 6 10	MW-4 5' MW-4 10'			ML.		SILT With Sand (ML); dark brown (10yr 3/3); dry; 30\$ clay, 55% silt, 15% fine grained sand; medium plasticity. CLAY (CL); dark greenish gray (gley1 4/10gy); dry; 70% clay, 30% silt; medium plasticity.	6.0 10.0 12.0	Portland Type i/II Cement
0 506 E. 14TH (506-510 IN	0	9 6 8 5 7 10 4	MW-4 15'		—15 <b>—</b>	CL		@ 14 fbg; green mottiing; yellowish brown (10yr 5/4)	18.0	<ul> <li>■ Bentonite Seal</li> <li>■ Monterey Sand #2/12</li> </ul>
CAMENVDC/SONOMA.SHELL/IOANLAND	0	7 9 5 8 10 7 10 11 7 9 9 9	MW-4 20'			ML		<ul> <li>SILT With Sand (ML); moist; 20% clay, 60% slit, 20% fine grained sand; medium plasticity.</li> <li>@ 19 fbg; wet; 10% clay, 50% slit, 10% fine grained sand.</li> <li>@ 20 fbg; moist; 10% clay, 70% slit, 20% fine grained sand; medium plasticity.</li> <li>@ 21 fbg; dry.</li> <li>@ 22 fbg; <u>SILT (ML)</u>; dry; 40% clay, 60% slit; high plasticity.</li> </ul>		Monterey Sand #2/12 Monterey Sand #2/12
WELL LOG (PID) WIDCAMENVI		8			-25-				25.0	Bottom of Boring @ 25 ft PAGE 1 OF 1



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CLIENT NAME	Shell Oil Products US	BORING/WELL NAME MW-5
JOB/SITE NAME	506-510 International Blvd	DRILLING STARTED 26-Jul-06
LOCATION	Oakland, CA	DRILLING COMPLETED 27-Jul-06
PROJECT NUMBER_	248-0898-006	WELL DEVELOPMENT DATE (YIELD) 25-Aug-09 (39 galions)
DRILLER	Gregg Drilling	GROUND SURFACE ELEVATION 31.96 ft above msl
DRILLING METHOD_	Hollow-stem auger	TOP OF CASING ELEVATION 31.61 ft above msi
BORING DIAMETER	10"	SCREENED INTERVAL 19 to 22 ft bgs
LOGGED BY	B. DeBoer	DEPTH TO WATER (First Encountered) 20.0 ft (27-Jul-06)
REVIEWED BY	A. Friel	DEPTH TO WATER (Static) 9.98 ft (29-Aug-06)
REMARKS	Hand Augered to 10 fbg	

	PID (ppm)	BLOW	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL	WELL DIAGRAM		
DEFAULT.GDT 10/4/06						ML		<u>SILT (ML);</u> dark yellowish brown (10yr 4/4); dry; 10% clay, 80% slit, 10% fine grained sand. @ 2 fbg; <u>Sandy SILT (ML);</u> very dark grayish brown (10yr 3/2); dry; 70% slit, 40% fine grained sand.	4.0				
ICISONOMA. SHELLYOAYLAND 508 E. 14TH (508-510 INTERVATIONAL BLVD)/GINTI505-510 INTERNATIONAL BLVD.GPJ DEFAULT.GDT 10/405	0		MW-5 5'		- 5 - 5 	CL		<u>CLAY (CL</u> ); (odor); dark greenish gray (gley1 4/10gy); dry; 60% clay, 40% silt; high plasticity. @ 6 fbg; 80% clay, 20% silt. <u>SILT (ML</u> ); greenish gray (gley1 5/10gy); dry; 15% clay,	8.0		Portland Type		
ONAL BLVD//GINT/506-510	0	7 9 10 9 10	MW-5 10'		 10	ML		75% silt, 10% fine grained sand; low plasticity. @ 10 fbg; greenish gray (gley1 5/5g); 35% clay, 55% silt, 10% fine grained sand; medium plasticity.					
14TH (508-510 INTERNATI	0	12 8 9 6 6 8 5 7	MW-5 15'	XIXIXIXIX XIXIX		CL		<ul> <li>@ 13 fbg <u>Sandy SILT (ML);</u> (Black Spotting); dark grayish brown (10yr 4/2); 50% silt, 40% sand, 10% fine <u>grained gravel; low plasticity.</u></li> <li><u>CLAY With Sand (CL)</u> yellowish brown (10yr 5/4); dry; 50% clay, 30% silt, 20% fine grained sand; medium plasticity.</li> <li>@ 15 fbg <u>CLAY (CL);</u> dry; 60% clay, 40% silt; high plasticity.</li> </ul>	_13.0		<ul> <li>Bentonite Seal</li> </ul>		
A SHELLYOAKLAND 506 E	0	10 4 7 9 5 8 10 7	MW-5 20'			ML		@18 fbg <u>CLAY With Sand (CL)</u> dry: 50% clay, 30% silt, 20% fine grained sand; high plasticity. <u>Sandy SILT (SM</u> ); moist; 20% silt, 80% fine grained sand. <u>Silty SAND (SM);</u> moist; 20% silt, 80% extra fine grained sand.	19.0		<ul> <li>Monterey</li> <li>Sand #2/12</li> <li>Monterey</li> </ul>		
N10CAMENVDC/SONOM	·	10 11 7 9 4 8 6		<b>KIXIXIXIXIXIX</b>	****	ML		Sandy SILT (ML); wet; 25% clay, 45% slit, 30% fine grained sand; medium plasticity. @ 22 fbg; <u>SILT (ML</u> ); dry; 40% clay, 60% slit; medium plasticity.	21.0		Sand #2/12 Monterey Sand #2/12 Bentonite Seal		
WELL LOG (PID) NIOCAMENVD					-25-						Bottom of Boring @ 25 ft PAGE 1 OF		