United States Environmental Protection Agency
Region 9 Laboratory

1337 S. 46th Street Building 201
Richmond, CA 94804

Date: 5/16/2019

Subject: Analytical Testing Results - Project R19N02
SDG: 19106A

From: Peter Husby, Director
EPA Region 9 Laboratory
EMD-3-1

To: Eugene E. Bromley
NPDES Permits Section
WTR-2-3

PETER HUSBY Digitally signed by PETER HUSBY Date: 2019.05.16 13:58:34 -07'00'

Attached are the results from the analysis of samples from the **Southern California Oil Platforms Spring 2019** project. These data have been reviewed in accordance with EPA Region 9 Laboratory policy.

A full documentation package for these data, including raw data and sample custody documentation, is on file at the EPA Region 9 Laboratory. If you would like to request additional review and/or validation of the data, please contact Audrey Johnson at the Region 9 Quality Assurance Office.

If you have any questions, please ask for Richard Bauer, the Lab Project Manager at (510)412-2300.

Electronic CC: Elizabeth Aubuchon, Water Enforcement
James Salmons, BSEE
Susan Zaleski, BOEM
Colby Tucker, Water Enforcement

Analyses included in this report:

Metals by ICP	Sulfide by Titration
Semivolatile Organic Compounds by GC/MS	Semivolatile Organic Compounds by GC/MS
Abalone Toxicity	Volatile Organic Compounds by GC/MS

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1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone:(510) 412-2300 Fax:(510) 412-2302

Project Manager: Eugene E. Bromley	**NPDES Permits Section**	**SDG:** 19106A
Project Number: R19N02	**75 Hawthorne Street**	**Reported:** 05/16/19 15:03
Project: Southern California Oil Platforms Spring 2019	**San Francisco CA, 94105**	

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Collected	Date Received
Edith	1904024-01	Water	04/15/19 08:00	04/16/19 10:25
Gilda	1904024-02	Water	04/15/19 09:00	04/16/19 10:25
Hillhouse	1904024-03	Water	04/15/19 10:00	04/16/19 10:25
Hogan	1904024-04	Water	04/15/19 11:00	04/16/19 10:25

Work Order 1904024

Requested analyses were for abalone development toxicity tests using *Haliotis rufescens* (red abalone) following Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms , EPA/600/R-95/136 and USEPA Region 9 Laboratory SOP #1004, RED ABALONE (*Haliotis rufescens*) LARVAL DEVELOPMENT TOXICITY TEST. A concurrent reference toxicity test was conducted for quality control as specified in the method. Statistical analyses were conducted using the CETIS statistical database program, version 1.9.0.8 for the reference toxicity test and produced water toxicity tests.

The test concentrations were based on the oil platform NPDES general permit requirements using the Test of Significant Toxicity (TST) approach described in *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-003, 2010). The chronic WET permit limit that must be met is rejection of the null hypothesis (Ho). Platforms Edith, Gilda, Hillhouse, and Hogan results show a rejection of the null hypothesis and are reported as Pass.

All QA/QC criteria were met.

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Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed	Method
Lab ID: 1904024-01									**Water - Sampled: 04/15/19 08:00**
Sample ID: Edith									**Total Metals by EPA 200 Series Methods**
Chromium		ND	U	100	ug/L	B19D084	04/17/19	04/25/19	200.7
Copper		ND	U	100	"	"	"	"	200.7
Zinc		ND	U	100	"	"	"	"	200.7
Sample ID: Edith									**Aquatic Toxicity Test by EPA Methods**
Test of Significant Toxicity		Pass	A2		%	B19E073	04/16/19	05/09/19	TOX_SOP1004
Lab ID: 1904024-02									**Water - Sampled: 04/15/19 09:00**
Sample ID: Gilda									**Total Metals by EPA 200 Series Methods**
Chromium		ND	U	100	ug/L	B19D084	04/17/19	04/25/19	200.7
Copper		ND	U	100	"	"	"	"	200.7
Zinc		ND	U	100	"	"	"	"	200.7
Sample ID: Gilda									**Semivolatile Organic Compounds by EPA Method 8270D**
Benzo(a)anthracene	RE1	ND	U, A2, J	20	"	B19D081	04/16/19	05/14/19	8270D
Chrysene	RE1	ND	U, A2, J	20	"	"	"	"	8270D
Benzo(b)fluoranthene	RE1	ND	U, A2, J	20	"	"	"	"	8270D
Benzo(k)fluoranthene	RE1	ND	U, A2, J	20	"	"	"	"	8270D
Benzo(a)pyrene	RE1	ND	U, A2, J	20	"	"	"	"	8270D
Dibenz(a,h)anthracene	RE1	ND	U, A2, J	20	"	"	"	"	8270D
Surrogate: Terphenyl-d14	*RE1*		80 %	*47-130%*		"	"	"	
Sample ID: Gilda									**Conventional Chemistry Parameters by APHA/EPA Methods**
Sulfide		250	A2, J	0.98	mg/L	B19D088	04/18/19	04/18/19	SM4500 S2-
Sample ID: Gilda									**Aquatic Toxicity Test by EPA Methods**
Test of Significant Toxicity		Pass	A2		%	B19E073	04/16/19	05/09/19	TOX_SOP1004
Lab ID: 1904024-03									**Water - Sampled: 04/15/19 10:00**
Sample ID: Hillhouse									**Semivolatile Organic Compounds by EPA Method 8270D**
Benzo(a)anthracene		ND	U, A2, J	49	ug/L	B19D081	04/16/19	05/13/19	8270D
Chrysene		ND	U, A2, J	49	"	"	"	"	8270D
Benzo(b)fluoranthene		ND	U, A2, J	49	"	"	"	"	8270D
Benzo(k)fluoranthene		ND	U, A2, J	49	"	"	"	"	8270D
Benzo(a)pyrene		ND	U, A2, J	49	"	"	"	"	8270D
Dibenz(a,h)anthracene		ND	U, A2, J	49	"	"	"	"	8270D
Surrogate: Terphenyl-d14			58 %	*47-130%*		"	"	"	
Sample ID: Hillhouse									**Aquatic Toxicity Test by EPA Methods**
Test of Significant Toxicity		Pass	A2		%	B19E073	04/16/19	05/09/19	TOX_SOP1004
Lab ID: 1904024-04									**Water - Sampled: 04/15/19 11:00**
Sample ID: Hogan									**Total Metals by EPA 200 Series Methods**
Chromium		ND	U	100	ug/L	B19D084	04/17/19	04/25/19	200.7

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Project Number: R19N02	**75 Hawthorne Street**	**Reported:** 05/16/19 15:03
Project: Southern California Oil Platforms Spring 2019	**San Francisco CA, 94105**	

Sample Results

Analyte	Reanalysis / Extract	Result	Qualifiers / Comments	Quantitation Limit	Units	Batch	Prepared	Analyzed	Method
Lab ID: 1904024-04									**Water - Sampled: 04/15/19 11:00**
Sample ID: Hogan									**Total Metals by EPA 200 Series Methods**
Copper		ND	U	100	ug/L	B19D084	04/17/19	04/25/19	200.7
Zinc		ND	U	100	"	"	"	"	200.7
Sample ID: Hogan									**Volatile Organic Compounds by EPA Method 524.2**
Benzene		670	A2, J, Q4	50	"	B19D082	04/16/19	04/16/19	524.2
Surrogate: Toluene-d8			100 %	*81-112%*		"	"	"	
Sample ID: Hogan									**Semivolatile Organic Compounds by EPA Method 8270D**
Benzo(a)anthracene		ND	U, A2, J	20	"	B19D081	04/16/19	05/13/19	8270D
Chrysene		ND	U, A2, J	20	"	"	"	"	8270D
Benzo(b)fluoranthene		ND	U, A2, J	20	"	"	"	"	8270D
Benzo(k)fluoranthene		ND	U, A2, J	20	"	"	"	"	8270D
Benzo(a)pyrene		ND	U, A2, J	20	"	"	"	"	8270D
Dibenz(a,h)anthracene		ND	U, A2, J	20	"	"	"	"	8270D
Surrogate: Terphenyl-d14			73 %	*47-130%*		"	"	"	
Sample ID: Hogan									**Aquatic Toxicity Test by EPA Methods**
Test of Significant Toxicity		Pass	A2		%	B19E073	04/16/19	05/09/19	TOX_SOP1004

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Quality Control

Analyte	Result	Qualifiers / Comments	Quantitation Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B19D081 - 3520C CLLE - SVOCs										
								Prepared: 04/16/19 Analyzed: 05/13/19		
								Semivolatile Organic Compounds by EPA Method 8270D - Quality Control		
Blank (B19D081-BLK1)										
Benzo(a)anthracene	ND	U	1	ug/L						
Chrysene	ND	U	1	"						
Benzo(b)fluoranthene	ND	U	1	"						
Benzo(k)fluoranthene	ND	U	1	"						
Benzo(a)pyrene	ND	U	1	"						
Dibenz(a,h)anthracene	ND	U	1	"						
Surrogate: Terphenyl-d14	*56.7*			"	*50.0*		113	*47-130*		
Blank (B19D081-BLK2)										
Benzo(a)anthracene	ND	U	1	ug/L						
Chrysene	ND	U	1	"						
Benzo(b)fluoranthene	ND	U	1	"						
Benzo(k)fluoranthene	ND	U	1	"						
Benzo(a)pyrene	ND	U	1	"						
Dibenz(a,h)anthracene	ND	U	1	"						
Surrogate: Terphenyl-d14	*50.1*			"	*50.0*		100	*47-130*		
LCS (B19D081-BS1)										
Benzo(a)anthracene	8.06		1	ug/L	10.0		81	67-110		
Chrysene	8.32		1	"	10.0		83	67-111		
Benzo(b)fluoranthene	8.31		1	"	10.0		83	60-110		
Benzo(k)fluoranthene	8.22		1	"	10.0		82	65-117		
Benzo(a)pyrene	7.37		1	"	10.0		74	56-110		
Dibenz(a,h)anthracene	8.13		1	"	10.0		81	59-119		
Surrogate: Terphenyl-d14	*45.0*			"	*50.0*		90	*47-130*		
Matrix Spike (B19D081-MS1)		**Source: 1904024-02**								
Benzo(a)anthracene	74.3		20	ug/L	99.6	ND	75	60-120		
Chrysene	72.5		20	"	99.6	ND	73	60-120		
Benzo(b)fluoranthene	72.5		20	"	99.6	ND	73	59-119		
Benzo(k)fluoranthene	75.1		20	"	99.6	ND	75	59-119		
Benzo(a)pyrene	66.7		20	"	99.6	ND	67	46-110		
Dibenz(a,h)anthracene	69.1		20	"	99.6	ND	69	60-120		
Surrogate: Terphenyl-d14	*347*			"	*498*		70	*47-130*		
Matrix Spike Dup (B19D081-MSD1)		**Source: 1904024-02**								
Benzo(a)anthracene	70.1		20	ug/L	99.0	ND	71	60-120	6	20
Chrysene	69.1		20	"	99.0	ND	70	60-120	5	20
Benzo(b)fluoranthene	69.3		20	"	99.0	ND	70	59-119	5	20
Benzo(k)fluoranthene	68.7		20	"	99.0	ND	69	59-119	9	20

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Quality Control

Analyte	Result	Qualifiers / Comments	Quantitation Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B19D081 - 3520C CLLE - SVOCs									**Prepared: 04/16/19 Analyzed: 05/13/19**	
								Semivolatile Organic Compounds by EPA Method 8270D - Quality Control		
Matrix Spike Dup (B19D081-MSD1)		**Source: 1904024-02**								
Benzo(a)pyrene	62.8		20	"	99.0	ND	63	46-110	6	20
Dibenz(a,h)anthracene	63.3		20	"	99.0	ND	64	60-120	9	20
Surrogate: Terphenyl-d14	*352*			"	*495*		71	*47-130*		
Batch B19D082 - 5030 P&T VOA - VOCs									**Prepared & Analyzed: 04/16/19**	
								Volatile Organic Compounds by EPA Method 524.2 - Quality Control		
Blank (B19D082-BLK1)										
Benzene	ND	U	0.5	ug/L						
Surrogate: Toluene-d8	*4.85*			"	*5.00*		97	*81-112*		
LCS (B19D082-BS1)										
Dichlorodifluoromethane	5.1		0.5	ug/L	5.00		102	70-128		
Chloromethane	5.01		0.5	"	5.00		100	63-123		
Vinyl chloride	5.12		0.5	"	5.00		102	70-130		
Bromomethane	5.21		0.5	"	5.00		104	31-150		
Chloroethane	5.1		0.5	"	5.00		102	74-119		
Trichlorofluoromethane	5.33		0.5	"	5.00		107	72-123		
1,1-Dichloroethene	5.23		0.5	"	5.00		105	70-130		
1,1,2-Trichloro-1,2,2-trifluoroethane	5.52		0.5	"	5.00		110	73-129		
Acetone	43.4		4	"	40.0		108	61-114		
Dichloromethane	5.15		0.5	"	5.00		103	70-130		
trans-1,2-Dichloroethene	5.26		0.5	"	5.00		105	70-130		
tert-Butyl methyl ether (MTBE)	21.4		2	"	20.0		107	62-117		
1,1-Dichloroethane	5.17		0.5	"	5.00		103	74-115		
2,2-Dichloropropane	5.58		0.5	"	5.00		112	64-144		
cis-1,2-Dichloroethene	5.05		0.5	"	5.00		101	70-130		
2-Butanone (MEK)	42.5		4	"	40.0		106	57-121		
Bromochloromethane	5.18		0.5	"	5.00		104	71-122		
Chloroform	5.13		0.5	"	5.00		103	70-130		
1,1,1-Trichloroethane	5.07		0.5	"	5.00		101	70-130		
Carbon tetrachloride	5.04		0.5	"	5.00		101	70-130		
1,1-Dichloropropene	5.13		0.5	"	5.00		103	71-119		
Benzene	5.12		0.5	"	5.00		102	70-130		
1,2-Dichloroethane	5.21		0.5	"	5.00		104	70-130		
Trichloroethene	5.04		0.5	"	5.00		101	70-130		
1,2-Dichloropropane	5.03		0.5	"	5.00		101	70-130		
Dibromomethane	5.29		0.5	"	5.00		106	72-121		
Bromodichloromethane	5.09		0.5	"	5.00		102	70-130		
cis-1,3-Dichloropropene	5.2		0.5	"	5.00		104	68-120		
Toluene	5.26		0.5	"	5.00		105	70-130		
trans-1,3-Dichloropropene	5.43		0.5	"	5.00		109	64-126		

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Quality Control

Analyte	Result	Qualifiers / Comments	Quantitation Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B19D082 - 5030 P&T VOA - VOCs										**Prepared & Analyzed: 04/16/19**
										Volatile Organic Compounds by EPA Method 524.2 - Quality Control
LCS (B19D082-BS1)										
1,1,2-Trichloroethane	5.34		0.5	"	5.00		107	70-130		
Tetrachloroethene	5.32		0.5	"	5.00		106	70-130		
1,3-Dichloropropane	5.35		0.5	"	5.00		107	80-114		
Chlorodibromomethane	5.26		0.5	"	5.00		105	70-130		
1,2-Dibromoethane (EDB)	5.4		0.5	"	5.00		108	80-115		
Chlorobenzene	5.22		0.5	"	5.00		104	70-130		
1,1,1,2-Tetrachloroethane	5.25		0.5	"	5.00		105	82-116		
Ethylbenzene	5.31		0.5	"	5.00		106	70-130		
m&p-Xylene	10.5		1	"	10.0		105	70-130		
o-Xylene	5.33		0.5	"	5.00		107	70-130		
Styrene	5.35		0.5	"	5.00		107	70-130		
Bromoform	5.28		0.5	"	5.00		106	70-130		
Isopropylbenzene	5.31		0.5	"	5.00		106	86-114		
Bromobenzene	5.33		0.5	"	5.00		107	84-110		
1,1,2,2-Tetrachloroethane	5.51		0.5	"	5.00		110	81-113		
1,2,3-Trichloropropane	5.45		0.5	"	5.00		109	81-114		
Propylbenzene	5.32		0.5	"	5.00		106	87-115		
2-Chlorotoluene	5.22		0.5	"	5.00		104	84-111		
4-Chlorotoluene	5.24		0.5	"	5.00		105	82-112		
1,3,5-Trimethylbenzene	5.28		0.5	"	5.00		106	85-113		
tert-Butylbenzene	5.28		0.5	"	5.00		106	86-114		
1,2,4-Trimethylbenzene	5.31		0.5	"	5.00		106	84-114		
sec-Butylbenzene	5.33		0.5	"	5.00		107	87-119		
1,3-Dichlorobenzene	5.29		0.5	"	5.00		106	85-110		
p-Isopropyltoluene	5.34		0.5	"	5.00		107	86-117		
1,4-Dichlorobenzene	5.24		0.5	"	5.00		105	70-130		
1,2-Dichlorobenzene	5.25		0.5	"	5.00		105	70-130		
Butylbenzene	5.34		0.5	"	5.00		107	85-118		
1,2-Dibromo-3-chloropropane	21.7		2	"	20.0		108	54-133		
1,2,4-Trichlorobenzene	5.44		0.5	"	5.00		109	70-130		
Hexachlorobutadiene	5.16		0.5	"	5.00		103	66-113		
Naphthalene	5.59		0.5	"	5.00		112	58-126		
1,2,3-Trichlorobenzene	5.46		0.5	"	5.00		109	65-119		
Surrogate: 1,2-Dichloroethane-d4	*5.04*			*"*	*5.00*		101	*83-116*		
Surrogate: Toluene-d8	*5.02*			*"*	*5.00*		100	*81-112*		
Surrogate: 4-Bromofluorobenzene	*5.04*			*"*	*5.00*		101	*80-110*		
Surrogate: 1,2-Dichlorobenzene-d4	*5.06*			*"*	*5.00*		101	*74-113*		
Matrix Spike (B19D082-MS1)		**Source: 1904024-04**								
Dichlorodifluoromethane	3.69			ug/L	5.00	0.00	74	62-142		
Chloromethane	4.39			"	5.00	0.00	88	54-144		

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Quality Control

Analyte	Result	Qualifiers / Comments	Quantitation Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B19D082 - 5030 P&T VOA - VOCs										**Prepared & Analyzed: 04/16/19**
								Volatile Organic Compounds by EPA Method 524.2 - Quality Control		
Matrix Spike (B19D082-MS1)		**Source: 1904024-04**								
Vinyl chloride	4.17			"	5.00	0.00	83	62-141		
Bromomethane	4.91			"	5.00	0.00	98	32-150		
Chloroethane	4.38			"	5.00	0.00	88	68-136		
Trichlorofluoromethane	4.05			"	5.00	0.00	81	66-142		
1,1-Dichloroethene	4.29			"	5.00	0.00	86	73-134		
1,1,2-Trichloro-1,2,2-trifluoroethane	4.15			"	5.00	0.00	83	65-148		
Acetone	48.8			"	40.0	4.08	112	20-150		
Dichloromethane	4.61			"	5.00	0.00	92	65-126		
trans-1,2-Dichloroethene	4.54			"	5.00	0.00	91	70-134		
tert-Butyl methyl ether (MTBE)	18.5			"	20.0	0.00	93	56-128		
1,1-Dichloroethane	4.57			"	5.00	0.00	91	67-134		
2,2-Dichloropropane	4.18			"	5.00	0.00	84	41-150		
cis-1,2-Dichloroethene	4.15			"	5.00	0.00	83	63-137		
2-Butanone (MEK)	37.5			"	40.0	0.65	92	48-142		
Bromochloromethane	4.33			"	5.00	0.00	87	70-132		
Chloroform	4.25			"	5.00	0.00	85	65-141		
1,1,1-Trichloroethane	3.94			"	5.00	0.00	79	69-116		
Carbon tetrachloride	3.67			"	5.00	0.00	73	65-130		
1,1-Dichloropropene	3.95			"	5.00	0.00	79	71-116		
Benzene	10.1			"	5.00	6.73	68	77-115		
1,2-Dichloroethane	4.24			"	5.00	0.00	85	71-112		
Trichloroethene	4.07			"	5.00	0.00	81	65-124		
1,2-Dichloropropane	4.17			"	5.00	0.00	83	73-118		
Dibromomethane	4.31			"	5.00	0.00	86	65-123		
Bromodichloromethane	4.1			"	5.00	0.00	82	72-118		
cis-1,3-Dichloropropene	4.17			"	5.00	0.00	83	69-113		
Toluene	13			"	5.00	8.08	99	84-115		
trans-1,3-Dichloropropene	4.72			"	5.00	0.00	94	67-117		
1,1,2-Trichloroethane	4.93			"	5.00	0.00	99	81-115		
Tetrachloroethene	4.57			"	5.00	0.00	91	81-115		
1,3-Dichloropropane	4.87			"	5.00	0.00	97	82-113		
Chlorodibromomethane	4.59			"	5.00	0.00	92	82-116		
1,2-Dibromoethane (EDB)	4.83			"	5.00	0.00	97	83-115		
Chlorobenzene	4.78			"	5.00	0.00	96	82-110		
1,1,1,2-Tetrachloroethane	4.63			"	5.00	0.00	93	77-116		
Ethylbenzene	6.16			"	5.00	1.28	98	85-112		
m&p-Xylene	12.6			"	10.0	2.87	97	84-113		
o-Xylene	7			"	5.00	2.02	100	82-110		
Styrene	4.99			"	5.00	0.00	100	25-150		
Bromoform	4.64			"	5.00	0.00	93	69-121		
Isopropylbenzene	4.86			"	5.00	0.00	97	80-117		
Bromobenzene	4.86			"	5.00	0.00	97	84-110		

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Project Manager: Eugene E. Bromley	**NPDES Permits Section**	**SDG:** 19106A
Project Number: R19N02	**75 Hawthorne Street**	**Reported:** 05/16/19 15:03
Project: Southern California Oil Platforms Spring 2019	**San Francisco CA, 94105**	

Quality Control

Analyte	Result	Qualifiers / Comments	Quantitation Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B19D082 - 5030 P&T VOA - VOCs										**Prepared & Analyzed: 04/16/19**
								Volatile Organic Compounds by EPA Method 524.2 - Quality Control		
Matrix Spike (B19D082-MS1)		**Source: 1904024-04**								
1,1,2,2-Tetrachloroethane	4.97			"	5.00	0.00	99	77-117		
1,2,3-Trichloropropane	4.94			"	5.00	0.00	99	78-115		
Propylbenzene	4.85			"	5.00	0.00	97	83-116		
2-Chlorotoluene	4.93			"	5.00	0.00	99	83-110		
4-Chlorotoluene	4.81			"	5.00	0.00	96	82-110		
1,3,5-Trimethylbenzene	4.94			"	5.00	0.00	99	82-112		
tert-Butylbenzene	4.71			"	5.00	0.00	94	81-115		
1,2,4-Trimethylbenzene	5.73			"	5.00	0.79	99	81-113		
sec-Butylbenzene	4.63			"	5.00	0.00	93	79-122		
1,3-Dichlorobenzene	4.84			"	5.00	0.00	97	82-110		
p-Isopropyltoluene	4.77			"	5.00	0.00	95	78-120		
1,4-Dichlorobenzene	4.79			"	5.00	0.00	96	81-110		
1,2-Dichlorobenzene	4.83			"	5.00	0.00	97	82-110		
Butylbenzene	4.68			"	5.00	0.00	94	72-122		
1,2-Dibromo-3-chloropropane	18.5			"	20.0	0.00	92	47-131		
1,2,4-Trichlorobenzene	4.98			"	5.00	0.00	100	62-115		
Hexachlorobutadiene	4.32			"	5.00	0.00	86	51-116		
Naphthalene	5.84			"	5.00	0.57	105	47-137		
1,2,3-Trichlorobenzene	4.89			"	5.00	0.00	98	62-117		
Surrogate: 1,2-Dichloroethane-d4	*4.45*			"	*5.00*		89	*83-116*		
Surrogate: Toluene-d8	*5.00*			"	*5.00*		100	*81-112*		
Surrogate: 4-Bromofluorobenzene	*4.99*			"	*5.00*		100	*80-110*		
Surrogate: 1,2-Dichlorobenzene-d4	*5.08*			"	*5.00*		102	*74-113*		
Matrix Spike Dup (B19D082-MSD1)		**Source: 1904024-04**								
Dichlorodifluoromethane	3.71			ug/L	5.00	0.00	74	62-142		21
Chloromethane	4.48			"	5.00	0.00	90	54-144		20
Vinyl chloride	4.19			"	5.00	0.00	84	62-141		19
Bromomethane	4.68			"	5.00	0.00	94	32-150		20
Chloroethane	4.51			"	5.00	0.00	90	68-136		17
Trichlorofluoromethane	4.21			"	5.00	0.00	84	66-142		19
1,1-Dichloroethene	4.32			"	5.00	0.00	86	73-134		18
1,1,2-Trichloro-1,2,2-trifluoroethane	4.23			"	5.00	0.00	85	65-148		19
Acetone	49.6			"	40.0	4.08	114	20-150		31
Dichloromethane	4.69			"	5.00	0.00	94	65-126		16
trans-1,2-Dichloroethene	4.64			"	5.00	0.00	93	70-134		19
tert-Butyl methyl ether (MTBE)	19			"	20.0	0.00	95	56-128		22
1,1-Dichloroethane	4.65			"	5.00	0.00	93	67-134		19
2,2-Dichloropropane	4.89			"	5.00	0.00	98	41-150		40
cis-1,2-Dichloroethene	4.9			"	5.00	0.00	98	63-137		46
2-Butanone (MEK)	43.5			"	40.0	0.65	107	48-142		34

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Project Manager: Eugene E. Bromley	**NPDES Permits Section**	**SDG:** 19106A
Project Number: R19N02	**75 Hawthorne Street**	**Reported:** 05/16/19 15:03
Project: Southern California Oil Platforms Spring 2019	**San Francisco CA, 94105**	

Quality Control

Batch B19D082 - 5030 P&T VOA - VOCs — **Prepared & Analyzed: 04/16/19**

Volatile Organic Compounds by EPA Method 524.2 - Quality Control

Analyte	Result	Qualifiers / Comments	Quantitation Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Matrix Spike Dup (B19D082-MSD1)		**Source: 1904024-04**								
Bromochloromethane	5.01			"	5.00	0.00	100	70-132		21
Chloroform	4.99			"	5.00	0.00	100	65-141		23
1,1,1-Trichloroethane	4.6			"	5.00	0.00	92	69-116		14
Carbon tetrachloride	4.37			"	5.00	0.00	87	65-130		14
1,1-Dichloropropene	4.56			"	5.00	0.00	91	71-116		15
Benzene	11.8			"	5.00	6.73	101	77-115		13
1,2-Dichloroethane	4.81			"	5.00	0.00	96	71-112		14
Trichloroethene	4.8			"	5.00	0.00	96	65-124		15
1,2-Dichloropropane	4.84			"	5.00	0.00	97	73-118		14
Dibromomethane	4.97			"	5.00	0.00	99	65-123		16
Bromodichloromethane	4.79			"	5.00	0.00	96	72-118		16
cis-1,3-Dichloropropene	4.85			"	5.00	0.00	97	69-113		19
Toluene	13.1			"	5.00	8.08	100	84-115		15
trans-1,3-Dichloropropene	4.74			"	5.00	0.00	95	67-117		19
1,1,2-Trichloroethane	4.88			"	5.00	0.00	98	81-115		20
Tetrachloroethene	4.52			"	5.00	0.00	90	81-115		14
1,3-Dichloropropane	4.78			"	5.00	0.00	96	82-113		18
Chlorodibromomethane	4.62			"	5.00	0.00	92	82-116		18
1,2-Dibromoethane (EDB)	4.86			"	5.00	0.00	97	83-115		20
Chlorobenzene	4.73			"	5.00	0.00	95	82-110		13
1,1,1,2-Tetrachloroethane	4.63			"	5.00	0.00	93	77-116		17
Ethylbenzene	6.1			"	5.00	1.28	96	85-112		13
m&p-Xylene	12.4			"	10.0	2.87	95	84-113		13
o-Xylene	6.9			"	5.00	2.02	98	82-110		13
Styrene	4.93			"	5.00	0.00	99	25-150		29
Bromoform	4.64			"	5.00	0.00	93	69-121		17
Isopropylbenzene	4.8			"	5.00	0.00	96	80-117		14
Bromobenzene	4.75			"	5.00	0.00	95	84-110		14
1,1,2,2-Tetrachloroethane	4.96			"	5.00	0.00	99	77-117		15
1,2,3-Trichloropropane	4.83			"	5.00	0.00	97	78-115		13
Propylbenzene	4.79			"	5.00	0.00	96	83-116		12
2-Chlorotoluene	4.75			"	5.00	0.00	95	83-110		12
4-Chlorotoluene	4.77			"	5.00	0.00	95	82-110		12
1,3,5-Trimethylbenzene	4.9			"	5.00	0.00	98	82-112		13
tert-Butylbenzene	4.66			"	5.00	0.00	93	81-115		16
1,2,4-Trimethylbenzene	5.73			"	5.00	0.79	99	81-113		13
sec-Butylbenzene	4.58			"	5.00	0.00	92	79-122		14
1,3-Dichlorobenzene	4.82			"	5.00	0.00	96	82-110		12
p-Isopropyltoluene	4.72			"	5.00	0.00	94	78-120		13
1,4-Dichlorobenzene	4.76			"	5.00	0.00	95	81-110		11
1,2-Dichlorobenzene	4.79			"	5.00	0.00	96	82-110		12
Butylbenzene	4.66			"	5.00	0.00	93	72-122		10

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Project Manager: Eugene E. Bromley	**NPDES Permits Section**	**SDG:** 19106A
Project Number: R19N02	**75 Hawthorne Street**	**Reported:** 05/16/19 15:03
Project: Southern California Oil Platforms Spring 2019	**San Francisco CA, 94105**	

Quality Control

Analyte	Result	Qualifiers / Comments	Quantitation Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B19D082 - 5030 P&T VOA - VOCs										**Prepared & Analyzed: 04/16/19**
								Volatile Organic Compounds by EPA Method 524.2 - Quality Control		
Matrix Spike Dup (B19D082-MSD1)		**Source: 1904024-04**								
1,2-Dibromo-3-chloropropane	18.6			"	20.0	0.00	93	47-131		15
1,2,4-Trichlorobenzene	5.01			"	5.00	0.00	100	62-115		13
Hexachlorobutadiene	4.44			"	5.00	0.00	89	51-116		14
Naphthalene	5.83			"	5.00	0.57	105	47-137		16
1,2,3-Trichlorobenzene	4.94			"	5.00	0.00	99	62-117		17
Surrogate: 1,2-Dichloroethane-d4	*5.12*			"	*5.00*		102	*83-116*		
Surrogate: Toluene-d8	*5.00*			"	*5.00*		100	*81-112*		
Surrogate: 4-Bromofluorobenzene	*5.02*			"	*5.00*		100	*80-110*		
Surrogate: 1,2-Dichlorobenzene-d4	*5.03*			"	*5.00*		101	*74-113*		
Batch B19D084 - 200 Series Digest - Metals by 200.7,Total										**Prepared: 04/17/19 Analyzed: 04/25/19**
								Total Metals by EPA 200 Series Methods - Quality Control		
Blank (B19D084-BLK1)										
Chromium	ND	U	10	ug/L						
Copper	ND	U	10	"						
Zinc	ND	U	10	"						
LCS (B19D084-BS1)										
Aluminum	2,020		20	ug/L	2000		101	85-115		
Boron	301		100	"	300		100	85-115		
Calcium	1,020		100	"	1000		102	85-115		
Chromium	401		10	"	400		100	85-115		
Copper	295		10	"	300		98	85-115		
Iron	3,030		100	"	3000		101	85-115		
Magnesium	2,030		500	"	2000		102	85-115		
Potassium	10,400		2,000	"	10000		104	85-115		
Sodium	3,140		500	"	3000		105	85-115		
Zinc	204		10	"	200		102	85-115		
LCS (B19D084-BS2)										
Lithium	203		2	ug/L	200		101	85-115		
Matrix Spike (B19D084-MS3)		**Source: 1904024-01**								
Chromium	3,540		100	ug/L	4000	ND	88	70-130		
Copper	2,650		100	"	3000	ND	88	70-130		
Zinc	1,890		100	"	2000	ND	94	70-130		
Matrix Spike Dup (B19D084-MSD3)		**Source: 1904024-01**								
Chromium	3,570		100	ug/L	4000	ND	89	70-130	1	20
Copper	2,690		100	"	3000	ND	90	70-130	1	20
Zinc	1,920		100	"	2000	ND	96	70-130	2	20
Batch B19D088 - Sulfide Prep - Sulfide										**Prepared & Analyzed: 04/18/19**
								Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control		
Blank (B19D088-BLK1)										

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Project: Southern California Oil Platforms Spring 2019	**San Francisco CA, 94105**	

Quality Control

Analyte	Result	Qualifiers / Comments	Quantitation Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B19D088 - Sulfide Prep - Sulfide										**Prepared & Analyzed: 04/18/19**
								Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control		
Blank (B19D088-BLK1)										
Sulfide	ND	U		1 mg/L						
LCS (B19D088-BS1)										
Sulfide	10			mg/L	9.98		101	80-120		
Batch B19E073 - - General Biology - Toxicity, Abalone										**Prepared & Analyzed: 05/09/19**
								Aquatic Toxicity Test by EPA Methods - Quality Control		
Reference (B19E073-SRM1)										
EC 50	41.2			ppb	47.0		88	51.8-148.19		

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Qualifiers and Comments

Q4 The matrix spike and/or matrix spike duplicate associated with this sample did not meet recovery criteria for this analyte (see MS/MSD results for this batch in QC summary)

Pass Pass

J The reported result for this analyte should be considered an estimated value.

A2 The sample was received above the recommended temperature range.

U Not Detected

NR Not Reported

RE1, RE2, etc: Result is from a sample re-analysis.