**Contra Costa Water District**

# CANAL REPLACEMENT PROJECT

## CEQA Addendum No. 7
## Segment 5B Diesel Generator & Pump Use

## MITIGATED NEGATIVE DECLARATION (MND)

**May 3, 2023**
**Planning Department**

# TABLE OF CONTENTS

**CONTRA COSTA WATER DISTRICT, CANAL REPLACEMENT PROJECT**
**CEQA ADDENDUM No.7**
**SEGEMENT 5B**
**May 3, 2023**

# SECTION 1
# BACKGROUND AND PURPOSE OF THIS ADDENDUM

The original proposed Contra Costa Canal Replacement Project CEQA Mitigated Negative Declaration (MND), SCH#200604082, was approved on November 30, 2006. Subsequent Addenda No. 1-6 have been prepared to address changes to the project, regulatory setting, or existing conditions. CCWD completed CEQA Addendum No. 6 for construction of Segment 5 in October of 2022. Figure 1 shows the locations of the canal projects. The construction sequence of past and future canal projects is shown in Figure 2.

Within CEQA Addendum No. 6, CCWD described its plans for construction dewatering and the use of dilution water to meet Central Valley Regional Water Quality Control Board's limited threat discharge permit requirements. At the time that CEQA Addendum No. 6 was prepared, details of the proposed dewatering and dilution system were not available or had been advanced only to a conceptual or pre-design level. It was thought initially that power for dewatering would be obtained from PG&E local transmission lines and augmented with standby generators in the event of electrical power interruptions or other emergency conditions. Sukut Construction attempted to obtain temporary electrical power for project dewatering but was informed that that this service would not be available in time to support project construction. Access to PG&E power from power lines at East Cypress Road would require construction of a temporary power system along the Canal right-of-way. At the southern end of the project site, there is also PG&E power for the Rock Slough Fish Screen; however, the available electrical power is insufficient for both the dewatering system and the fish screen.

CEQA Addendum No. 7 is intended to address potential environmental effects associated with the contractor's dewatering and dilution system, including portable diesel generators and diesel pumps, as designed by Sukut Construction, the prime Construction Contractor for Segment 5B of the Contra Costa Canal Replacement Project. The design includes electric submersible pumps for dewatering groundwater around the pipeline, from East Cypress Road/Jersey Island Road southeast to the Rock Slough Fish Screen, and a Dilution Station at the southern end of Segment 5B. See Figure 3.

To achieve the effluent discharge limit for Total Dissolved Solids (TDS), dewatering water will be diluted with freshwater from Rock Slough. Peak dewatering water flow is projected to be 2.88 million gallons per day (mgpd). Up to 7.56 mgpd of freshwater may be blended with dewatering water during construction of Segment 5B. The total flow is approximately 10.4 mgpd. CCWD's Limited Threat Discharge permit allows for up to 12 mgpd of discharge of diluted groundwater at the Sand Mound Slough discharge location.

The Contactor has proposed dewatering wells to lower the water table temporarily during installation of the replacement pipeline. Each well would have a downhole submersible electric pump. Diesel-powered generators are proposed for electrical power. Each set of forty (40) electric submersible pumps will be powered by a portable diesel generator or "genset." Reaches 1-4 will each have 40 dewatering wells. Reach 5 will have five dewatering wells, for a total of 165 wells. As construction progresses, these wells will be activated sequentially from Reach 1 on the north to Reach 4 on the south.

As canal replacement progresses from Reach 1 to Reach 4, active dewatering will progress north to south. Segment 5B construction is expected to begin later in summer 2023 and to be completed in fall 2023.

All of the previous mitigation measures adopted for the proposed project as approved in the 2006 CEQA IS/MND and Addenda No. 1-6 will be implemented for completion of Segment 5B with diesel-powered generators and pumps. CEQA Addendum No. 5 addressed the use of portable generators and pumps during construction of Segments 3 and 4. Mitigation measures from Addendum No. 5 for Air Quality and

Hazardous Materials will apply for construction of Segment 5B. Mitigation Measure N-5 will not be required for Segment 5B generators and pumps, since the distance of sensitive receivers from this equipment will be great enough that objectives of the local City of Oakley noise ordinance can be achieved without the measure. However, pump sound enclosures, either manufactured from the manufacturer/vendor or else temporary constructed on site, will be used to avoid potential noise impacts including those on nesting swallows at the Rock Slough Fish Screen Headworks[1] structure.

Based upon our analysis of potential effects on air quality, noise, and hazardous materials, new significant environmental effects or a substantial increase in the severity of previously identified significant effects are not expected to result from use of the diesel-powered generators and pumps. Therefore, submittal of Addendum No. 7 meets the requirements of CEQA Guidelines (Sections 15162 and 15164) without the need to re-circulate a subsequent EIR or a subsequent Negative Declaration.

[1] The Rock Slough Headworks is a bridge that formally had a screen and bar rack at what was previously the entrance to the Contra Costa Canal before construction of the Rock Slough Fish Screen in 2011.


CONTRA COSTA WATER DISTRICT

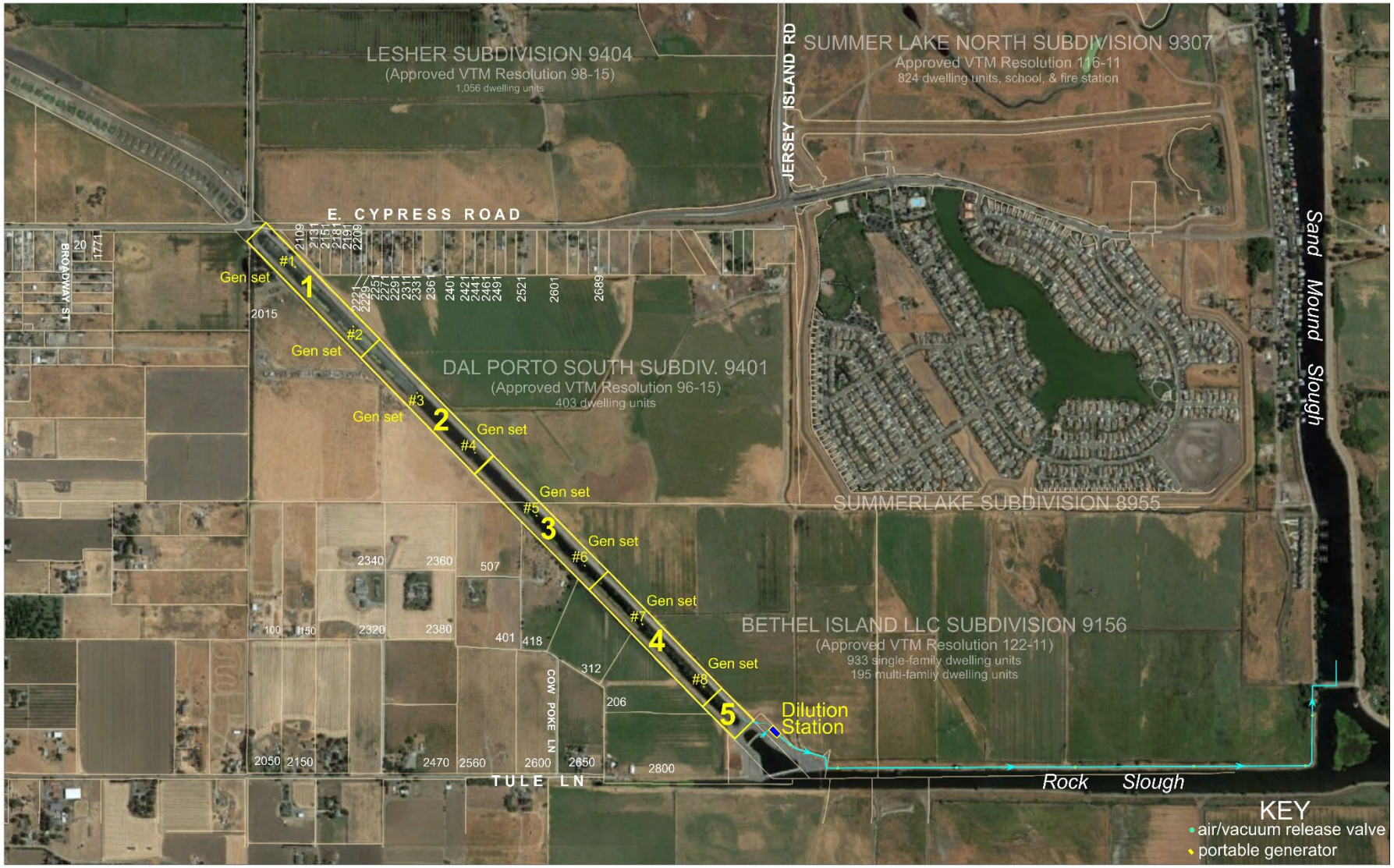
0 2000 FEET

**Figure 1**
**Canal Replacement Segments**


CONTRA COSTA WATER DISTRICT

0 2000 FEET

**Figure 2**
**Canal Projects Completion Timeline**




CONTRA COSTA WATER DISTRICT

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**Figure 3**
**Segment 5B Reaches & Dilution Station**

# SECTION 2
# DESCRIPTION OF DIESEL GENERATORS & PUMPS

Segment 5B spans East Cypress Avenue/Jersey Island Road southeast to the Rock Slough Fish Screen. Sukut has further delineated Segment 5B north to south by Reaches 1–5. Reaches 1-4 are each approximately 1,600 lineal feet. Reach 5 is only a few hundred feet in length. The Dilution Station, to be located adjacent and north of the Rock Slough Fish Screen afterbay, will collect dilution water to blend with Segment 5B groundwater. Dilution water would be pumped from Rock Slough. Discharge at Sand Mound Slough will be via temporary overland pipe east from the Dilution Station (see Figure 3).

Trenching and installation of 10-foot diameter water pipe necessitate dewatering to lower the local water table within the work zone. A Dewatering & Dilution Plan has been designed to achieve the necessary dewatering and also achieve discharge water quality requirements.

Utility grid power is unavailable or insufficient; therefore, dewatering and dilution will use portable diesel-powered generators to power the electric submersible dewatering pumps, two (2) portable diesel-powered pumps at the Dilution Station, and a diesel-powered generator and backup to power electrical instrumentation and controls at the Dilution Station.

**Dewatering and Dilution Station Generators** To power the electric submersible dewatering pumps, diesel-powered generators will be setup temporarily, two in each reach. These will be approximately 36kW generators each with an integral fuel tank. Approximate locations are shown in Figure 3.

Eight (8) generator locations are shown along Reaches 1-4, in addition to the one (1) for the Dilution Station controllers, sensors, flow meters, and data loggers. At any time during the construction the number of generators deployed and operating for dewatering may be fewer. As replacement work progresses north to south, the generators initially placed at the north end will be re-deployed toward the south.

Generators will power the electric submersible dewatering pumps depending on the number needed to be brought on line. In addition to the generators for dewatering pumps, there will be one generator and a backup at the Dilution Station.

The Dilution Station will be located at the southern end of Segment 5B on the north side of the Rock Slough Fish Screen afterbay. Portable generator electricity will be used to power the Dilution Station's controllers, sensors, flow meters, and data loggers. Portable diesel-powered generators including the backup generator will be Tier 4 Final[2]. Generators would operate 24 hours per day, 7 days per week, during dewatering (July 1– October 31). Engine generators and pumps will be shielded in enclosures and sited as far away as feasible to avoid potential effects upon nesting swallows.

**Dilution Water and Discharge Pumps** In addition to operating diesel-powered generators, there will be two (2) operating diesel-powered pumps at the Dilution Station. Diesel Pump #1 will be an 8-inch × 8-inch pump, 8 inches referring to the diameter of the inlet and outlet. Diesel Pump #2 will be a 12-inch × 12-inch pump.

Diesel Pump #1 will throttle up or down to convey dilution water from the afterbay behind the Rock Slough Fish Screen. Dilution water will be necessary to create blended water suitable for discharge, as

[2] Tier 4 refers to a set of emissions requirements established by the U.S. EPA to reduce emissions of particulate matter (PM), oxides of nitrogen (NOx) and air toxics from new, non-road diesel engines. As part of this clean air initiative, the U.S. EPA proposed New Source Performance Standards (NSPS) to define the acceptable levels of emissions by large stationary generator sets. Standards set forth by NSPS are intended to regulate national emissions and are designed to be progressively tightened over time to achieve a steady rate of air quality improvement without unreasonable economic disruption.

the groundwater alone is expected to be too brackish to meet Central Valley RWQCB discharge requirements. Diesel Pump #2 will discharge dewatered groundwater from an interim storage tank into the effluent water conveyance pipe and static mixer. Figure 4 provides an illustration of the proposed configuration of the Dilution Station.

**Fuel Storage** Diesel fuel for the generators and pumps will be stored in integral tanks and external fuel storage tanks with built-in secondary containment. Electrical power generators will have integral fuel tanks for 24-hour operation between refueling events. Pumps #1 will have an integral fuel tanks. Generators and fuel tanks will have triple containment with double-containment integral in the equipment and, in addition, spill containment placed under the units. Generators, fuel tanks, and fuel lines (if any between the fuel storage tanks and the generators) will be contained within berms constructed using InstaBerm brackets lined with PacTec X-Guard 30-mil chemical resistant sheeting or equivalent.

**Construction Duration** Construction activities for Segment 5B are expected to occur over a single 6-month window May 1 to November 30. Generators for dewatering wells are expected to be in use for approximately four months.

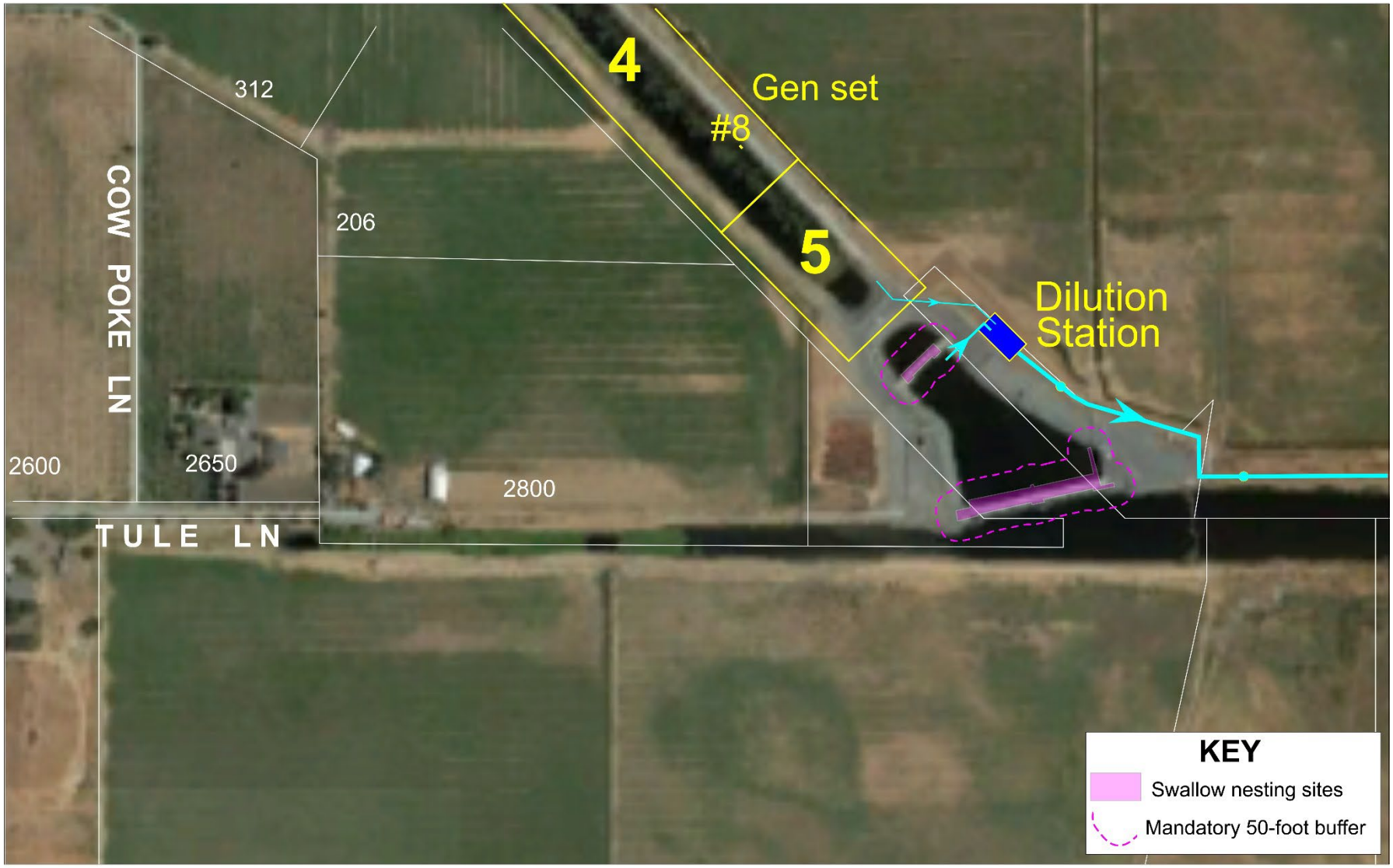


**Figure 4**
**Avoidance Siting for Dilution Station**

# SECTION 3
# ANALYSIS OF POTENTIAL ENVIRONMENTAL EFFECTS

Section 3 of the 2006 MND describes the project's environmental and regulatory setting with respect to air quality and greenhouse gases, noise, and hazardous materials. This information has been evaluated in updated Air Quality, Greenhouse Gases, Noise, and Hazardous Materials Assessments sections which follow.

## 3.1 AIR QUALITY

### Existing Setting

The project site is located in the Bay Area Air Quality Management District in eastern Contra Costa County of the San Francisco Bay Area (SFBA). Since the time of the original 2006 MND, the BAAQMD has had three clean air plans (CAPs). The current 2017 CAP was adopted on April 19, 2017.

Over the past 17 years, more stringent air quality standards have been adopted, and additional control measures aimed at attaining the air quality standards also have been adopted. Air quality in the SFBA generally has improved. Ozone design values at Bethel Island have decreased from 0.073–0.076 ppm during 2005-2010 to 0.065–0.068 ppm during 2016-2021. Air quality standard attainment status is marginal non-attainment for the federal 8-hour ozone standard (2015) which is 0.070 ppm (U.S EPA, 2023).

The Pittsburg/Antioch priority community is one of the seven identified communities having vulnerability to adverse health effects of air pollution. In the priority communities, air toxic control measures to reduce emissions of diesel particulate (DPM) exhaust and other TACs are especially relevant since DPM has been identified as the leading TAC in the SFBA. The project site is located east of the Pittsburg/Antioch priority community and outside the other priority community areas defined by the BAAQMD.

### Impacts

Table 3 reports total air pollutant emissions in tons and emission of GHGs in metric tons (MT) for construction of Segment 5B. Emissions for construction of Segment 5B are expected to be less than the thresholds of significant effect. Therefore, the proposed project is not considered by the BAAQMD to have potential for causing or contributing to a violation of an ambient air quality standard.

Air pollutant emissions were estimated by CalEEMod2022 for non-road equipment (*e.g.*, cranes, excavators, dozers, diesel-powered generators) used during construction of Segment 5B. Equipment and operating hours were provided by the prime contractor. Emission factors were modeled by CalEEMod2022 based upon contractor-provided horsepower, load factor, engine exhaust emission tier. Proposed Dilution Station pumps exceeded the horsepower range of pumps in CalEEMod2022. For the calculation of generator and diesel-powered pump emissions, 36 kW (Generators), 97 HP and 75% load (Pump #1), 341 HP and 40% load (Pump #2), and Tier 4 Final engine exhaust limits were assumed.[3]

[3] Generators: MultiQuip WhisperWatt™ (Model DCA45SSIU4F) 36kW, certified as U.S. EPA Tier 4 Final.
Diesel Pump #1: Pioneer Pump Model SAPP88S12L71 (12.25-inch diameter impeller), with a Deutz 97 horsepower (HP) engine, Model TCD3.6L4, certified as U.S. EPA Tier 4 Final. Engine Model TCD3.6L4 will have a diesel oxidation catalyst and Selective Catalytic Reduction (SCR) catalyst.
Diesel Pump #2: Pioneer Pump Model PP1212S17L71 (17.25-inch diameter impeller), with a John Deere 341 HP engine, Model 6090CI550, certified as U.S. EPA Tier 4 Final. Engine Model 6090CI550 will have a diesel oxidation catalyst, diesel particulate filter, and SCR catalyst.

## Table 3. Segment 5B Construction Emissions

| EMISSION CATEGORY | ROG | $NO_x$ | CO | $SO_x$ | $PM_{10exh}$ | $PM_{2.5exh}$ | $CO_2e$ |
|---|---|---|---|---|---|---|---|
| **Construction daily exhaust emissions** | | | | | | | |
| Average daily (lbs/day) | 2.52 | 12 | 59 | 0.07 | 0.43 | 0.41 | 13,200 |
| Annualized (lbs/day) | 1.48 | 10 | 40 | 0.05 | 0.37 | 0.31 | 8,900 |
| **Daily Thresholds of Significant Effect** | | | | | | | |
| **BAAQMD THRESHOLD (lbs)** | **54** | **54** | NA | N/A | **82** | **54** | N/A |
| **Construction total exhaust emissions** | | | | | | | |
| Total (tons) | 0.27 | 1.86 | 7.30 | 0.01 | 0.067 | 0.057 | --- |
| CO2e (metric tons) | --- | --- | --- | --- | --- | --- | 1,500(1) |
| **Annual Thresholds of Significant Effect** | | | | | | | |
| **BAAQMD THRESHOLD (tons)** | **10** | **10** | **NA** | **NA** | **15** | **10** | **---** |

**NOTES**
ROG reactive organic gases NOx nitrogen oxides CO carbon monoxide SOx sulfur oxides
PM particulate matter exh particulate in exhaust (only) CO2e carbon dioxide equivalent
lbs pounds MT metric tons
(1) Rounded to the nearest 100 MT $CO_2e$ from 1,478 MT $CO_2e$.
(2) Current operational threshold. BAAQMD has not re-established a new greenhouse gas emission threshold for construction, which previously had been 1,100 MT $CO_2e$ for operations and construction.

Total emission (tons) for construction of Segment5B would be lower than emissions projected in the original 2007 Final Environmental Assessment /FONSI for each segment of the project (USBR, 2007). The Final EA reported (page 63) that construction of Segment 1 would be expected to generate the maximum emissions of any segment of the canal replacement. Segment 1 construction-phase emissions were reported as 0.6 tons of ROG and 5.0 tons of NOx. Inspection of Table 3 shows that Segment 5B construction emissions would be 37 to 45 percent of previously forecast emissions.

### Mitigation Measures

**AQ Impact 1** The proposed project entails substantial earthwork and, therefore, has the potential to cause trackout of mud and soil carried onto public roads. This could conflict with control measures in the adopted 2017 CAP.

> **AQ Mitigation Measure-1**: Provisions for trackout control of soil/mud from project construction will be implemented as construction best practices CBP6 and CBP7 described in Table 4).

**AQ Impact 2** The proposed project would generate fugitive dust (PM) during earthwork and diesel particulate matter (DPM) in exhaust. The BAAQMD views these construction sources as mitigated and less-than-significant subject to implementation of recommended basic practices or Construction Best Practices, depending on the scale of the construction.

> **AQ Mitigation Measure-2**: CCWD shall require contractors to implement a Dust & Diesel Exhaust Control Plan to be approved by CCWD at the time construction occurs. Control measures likely will include basic practices and selected Construction Best Practices

identified in BAAQMD's current 2017 CEQA Air Quality Guidelines (see Tables 4 and 5) to reduce fugitive dust, DPM emission from equipment idling, and downwind PM and DPM concentrations from on-site construction and equipment.

## Table 4. Construction Practices for Dust Control

| Construction Basic Practice for Dust Control | |
|---|---|
| **A1** | Water [*at least*] two times per day exposed soil surfaces (*e.g.*, staging areas, soil piles, graded areas, and unpaved access roads). BEST Maintain minimum soil moisture of 12 percent. Moisture content can be verified by lab samples or moisture probe. |
| **A2** | Cover haul trucks transporting soil, sand, or other loose material to or from the site. |
| **A3** | Remove visible mud or dirt track-out onto adjacent public roads, using wet power vacuum street sweepers at least once per day. The use of dry power sweeping should be done in conjunction with thorough watering of the subject roads. |
| ~~**A4**~~ | Limit vehicle speeds on unpaved roads [*less than*] 15 mph. |
| **A5** | Complete road, driveway and sidewalk paving as soon as possible. |
| **A8** | Post a sign visible to the public with the telephone number and person to contact at the Lead Agency regarding dust or odor complaints. The Air District's Complaint Line (1-800-334-6367) shall also be included on posted signs to ensure compliance with applicable best practices and regulations. *NOTE: The recommended response time for corrective actions, if any, shall be within 48 hours*. |
| **Construction Best Practices for Dust Control** | |
| **BP1** | Water exposed soil surfaces to maintain soil moisture at 12 percent or higher |
| **BP2** | Suspend grading or demolition when average wind speed exceeds 20 mph or 10 mph over average. |
| **BP3** | Install wind breaks (*e.g.*, trees, fences) on the windward side(s) of actively disturbed areas of construction. Wind breaks should have at maximum 50 percent air porosity. |
| **BP4** | Plant vegetative ground cover (*e.g.* fast germinating native grass seed) in disturbed areas as soon as possible and watered appropriately until vegetation is established. |
| **BP5** | Phase or stagger grading activities to reduce the amount of earth disturbance and equipment exhaust occurring next to a specific sensitive receptor at any one time. |
| **BP6** | Wash truck beds, trailers, equipment tracks or tire treads before hauling or transporting equipment off site. |
| **BP7** | Treat the site entry with a six- to 12-inch compacted layer of wood chips, mulch, or gravel, to minimize mud/dirt track-out. |

**SOURCE**:
BAAQMD, 2017. *California Environmental Quality Act Air Quality Guidelines*, May 2017, (224 pp.).
http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en

BAAQMD, 2016. *Planning Healthy Places; A Guidebook for Addressing Local Sources of Air Pollutants in Community Planning*, DRAFT, January 2016, (44 pp.), pp. 14-15 and 25. http://www.baaqmd.gov/~/media/files/planning-and-research/planning-healthy-places/draft_planninghealthyplaces_marchworkshop-pdf.pdf?la=en

## Table 5. Construction Practices for Control of Exhaust

| Construction Basic Practice for Control of Exhaust | |
|---|---|
| **A6** | Minimize idling times to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points. |
| **A7** | All construction equipment shall be maintained and properly tuned in accordance with the manufacturers' specifications. |
| **Construction Best Practices for Control of Exhaust** | |
| **BP8** | Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent. |
| **BP9** | Limit idling time of diesel powered construction equipment, trucks and generators to no more than 2 minutes. Post clear signage regarding the Idling Time Limit at all access points. |
| **BP10** | The applicant/general contractor for the project shall demonstrate to the local jurisdiction that all off-road equipment greater than 50 bhp that will be operating during construction, including equipment from subcontractors, would achieve a project-wide fleet-average 20 percent $NO_x$ reduction and 45 percent PM reduction compared to the most recent ARB fleet average. Acceptable options for reducing emissions include the use of late model engines (Tier 3 or Tier 4), alternative fuels, engine retrofit technology, after-treatment low-emission diesel products, add-on devices such as particulate filters (DPFs), and/or other options as such become available.<br><br>*NOTE: Equipment with engines meeting Tier 4 Interim or Tier 4 Final emission standards automatically meet the Verified Diesel Emission Control Strategies (VDECS) requirement.* |
| **BP12** | Require that all construction equipment, diesel trucks, and generators be equipped with Best Available Control Technology for emission reductions of $NO_x$ and PM. |
| **BP13** | Require contractors to use equipment that meets California ARB's most recent certification standard for non-road heavy duty diesel engines. |

**SOURCE**:
BAAQMD, 2017. *California Environmental Quality Act Air Quality Guidelines*, May 2017, (224 pp.). http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en

BAAQMD, 2016. *Planning Healthy Places; A Guidebook for Addressing Local Sources of Air Pollutants in Community Planning*, DRAFT, January 2016, (44 pp.), pp. 14-15 and 25. http://www.baaqmd.gov/~/media/files/planning-and-research/planning-healthy-places/draft_planninghealthyplaces_marchworkshop-pdf.pdf?la=en

## 3.2 GREENHOUSE GASES

### Existing Setting

The BAAQMD which published *CEQA Air Quality Guidelines* in 2017 no longer recommends a specific threshold of significant effect for construction-phase greenhouse gas (GHG) emission. The BAAQMD has not proposed a construction-related climate impact threshold at this time. The BAAQMD's reasoning is that GHG emission from construction represent a very small portion of GHG emission over a project's lifetime.

Few jurisdictions have formally adopted a threshold. Many local jurisdictions may still consider GHG emission less than 1,100 MT $CO_2e$/year as causing a less-than-significant effect. However, the thrust of current planning is toward evaluation of project consistency with locally-adopted GHG emission reduction measures and state policies such as GHG emission reduction targets.

### Impacts

During the construction period, the proposed Segment 5B canal replacement could generate approximately 1,500 metric tons of $CO_2$ equivalent (1,500 MT $CO_2e$). See Table 3. Calculated construction emission of $CO_2e$ includes the proposed temporary diesel-powered generators, diesel-powered pumps, non-road equipment, and on-road vehicles.

Diesel-powered pumps and generators will emit approximately 590 MT $CO_2e$, which is approximately 40 percent of total construction emission of GHGs. Diesel-powered pumps, necessary for dilution of construction dewatering water to meet Central Valley RWQCB TDS discharge limits, will emit approximately 340 MT $CO_2e$. On-road and non-road construction sources contribute the 60 percent remainder.

Segment 5B dewatering pumps will consume 288,000 kilowatt-hours (kWh) during the construction and the dewatering system generators will emit approximately 250 MT $CO_2e$. In comparison, if powered by the PG&E grid, 288,000 kWh consumed for dewatering would be associated with power plant GHG emission of approximately 27 MT $CO_2e$.[4]

This magnitude of electricity consumption for dewatering of Segment 5B (288,000 kWh) is comparable to the 250,000 kWh of electricity estimated for dewatering of Segment 2. For Segment 2, indirect emission of GHG from power plants generating the electricity used by dewatering pumps was estimated to be 57 MT $CO_2e$ (USBR, 2013).[5] Over time since 2013, PG&E grid power has reduced its carbon footprint from 430 pounds of CO2e per megawatt-hour (430 lbs CO2e/MWh) to approximately 206 lbs CO2e/MWh.

Portable generators have a relatively higher carbon footprint compared to PG&E grid power. Compared to PG&E power at approximately 206 lbs CO2e/MWh, the proposed generators could emit 1,882 lbs CO2e/MWh.

### Mitigation Measures

Engines meeting Tier 4 Interim or Tier 4 Final emission standards automatically meet the Verified Diesel Emission Control Strategies (VDECS) requirement. Supplemental mitigation measures are not proposed.

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4 This was estimated at 206 lbs CO2e/MWh (PG&E, 2023).

5 This 57 MT $CO_2e$ represents indirect $CO_2e$ emission from power-generation plants delivering 250,000 kWh. In the *Draft Supplemental Environmental Assessment of the Contra Costa Canal Replacement Segment 2*, which was prepared by USBR in 2013, direct emission of GHG for construction of Segment 2 was reported as 900–1,000 MT $CO_2e$ MT $CO_2e$.

## 3.3 COMMUNITY NOISE

The 2006 MND describes the project's environmental and regulatory setting with respect to noise. Although the East Cypress Corridor residential subdivisions adjacent to Segment 5 have been approved by the City of Oakley in the intervening period 2006-2023, they have not been constructed. The nearest residences will be approximately 100 feet, or farther, from Segment 5B. These include the houses located along East Cypress Road generally east of the Canal (see Figure 3).

### Existing Setting

The project site is located in east Contra Costa County, within the limits of the City of Oakley. Owing to the project site's distance from highway and arterial street noise sources, and the undeveloped nature of much of the land adjoining the canal right-of-way, the existing traffic volume along East Cypress Road is moderate, traffic volume on Tule Lane is low, and background noise levels along Segment 5 are relatively low.

**Community Noise Levels** Few sound level measurements have been performed in the area. Community noise levels were measured over 24 hours at 2689 East Cypress Road (Oakley, City of, 2005). The range of noise levels (Leq, L90, and L50) generally peaks in the morning 7-10 a.m. with a minor peak in the evening 6-8 p.m. Leq is a special hourly average containing the same energy as the time-varying noise. L"number" refers to the noise level exceeded "number" percent of the time. L90 is similar to a minimum noise level. L50 is the same as the median or 50$^{th}$ percentile. The L"xx" was recorded each hour; therefore, there is a range as daytime and nighttime noise is time-varying.

| Daytime (7 am-10 pm) | | | Nighttime (10 pm-7 am) | | |
|---|---|---|---|---|---|
| **L90** | **L50** | **Leq** | **L90** | **L50** | **Leq** |
| 43-48 | 45-53 | 47-55 | 42-47 | 45-50 | 46-51 |

**Applicable Regulation and Guidance** Chapter 9: Noise Element of the City of Oakley's General Plan recommends that nighttime noise level not exceed 45 dBA (1-hour $L_{eq}$) during 10 p.m. to 7 a.m. and daytime noise level not exceed 55 dBA (1-hour $L_{eq}$). While these recommendations do not apply to temporary construction, the guidance is relevant as it indicates the degree of quiet adequate to promote outdoor use of backyards without disturbance and undisturbed sleep indoors at nighttime with normal residential construction. The nighttime level (45 $L_{eq}$) was selected to evaluate proposed diesel-powered pumps and generators which would operate 24/7 during the construction.

Construction activities between 7:30 a.m. and 7:00 p.m., Monday through Friday, and 9:00 a.m. to 7:00 p.m., Saturday and Sunday, are allowed under provisions of Section 4.2.208 of the applicable City of Oakley Noise Ordinance, Chapter 2: Noise Control (Oakley, City, of, 2019). Construction activities such as grading, excavation, and backfilling are not proposed during evening and nighttime hours (7:00 p.m. to 7:30 a.m., Monday through Friday, and 7:00 p.m. to 9:00 a.m., Saturday and Sunday).

Section 4.2.204 prohibits nuisance conditions. For any person within the residential areas of the City of Oakley, a noise nuisance includes any loud, disturbing, or habitual noise or any noise that annoys, disturbs, injures, or endangers the health, repose, peace, or safety of a reasonable person of normal sensitivity present in the area. It is unlawful to maintain, persistently emit, or cause, mechanically or otherwise, such noise.

**Sensitive Receivers** The nearest residential receivers are identified below. Distances are from the near edge of right-of-way to the face of residence.

**Location #1** Near the intersection of E. Cypress Road and Jersey Island Road. The nearest existing house is located at 2109 E. Cypress Road, approximately 100 feet northeast from the canal right-of-way.

**Locations #2 and #3** These receivers are 401 Cow Poke Lane approximately 800 feet southwest from the canal right-of-way and 418 Cow Poke Lane 180 feet southwest from the canal right-of-way.

**Locations #4, #5, #6 and #7** These receivers are 2320, 2340, 2360, and 2380 Tule Lane, located 900-1,500 feet southwest from the canal right-of-way.

**Locations #8 and #9** These receivers are 2650 and 2800 Tule Lane, located 1,000-1,200 feet southwest of the canal right-of-way. These receivers also are the closest to the proposed Dilution Station, being located approximately 1,500 to 1,700 feet west of the proposed Dilution Station.

In addition to these human receivers, nesting birds including cliff swallows are protected under the federal Migratory Bird Treaty Act. The cliff swallows nest under the Rock Slough Fish Screen Headworks structure. Siting of the dilution station equipment and enclosures or shielding will be used to avoid potential for noise–related impact (Lescalleet, 2023).

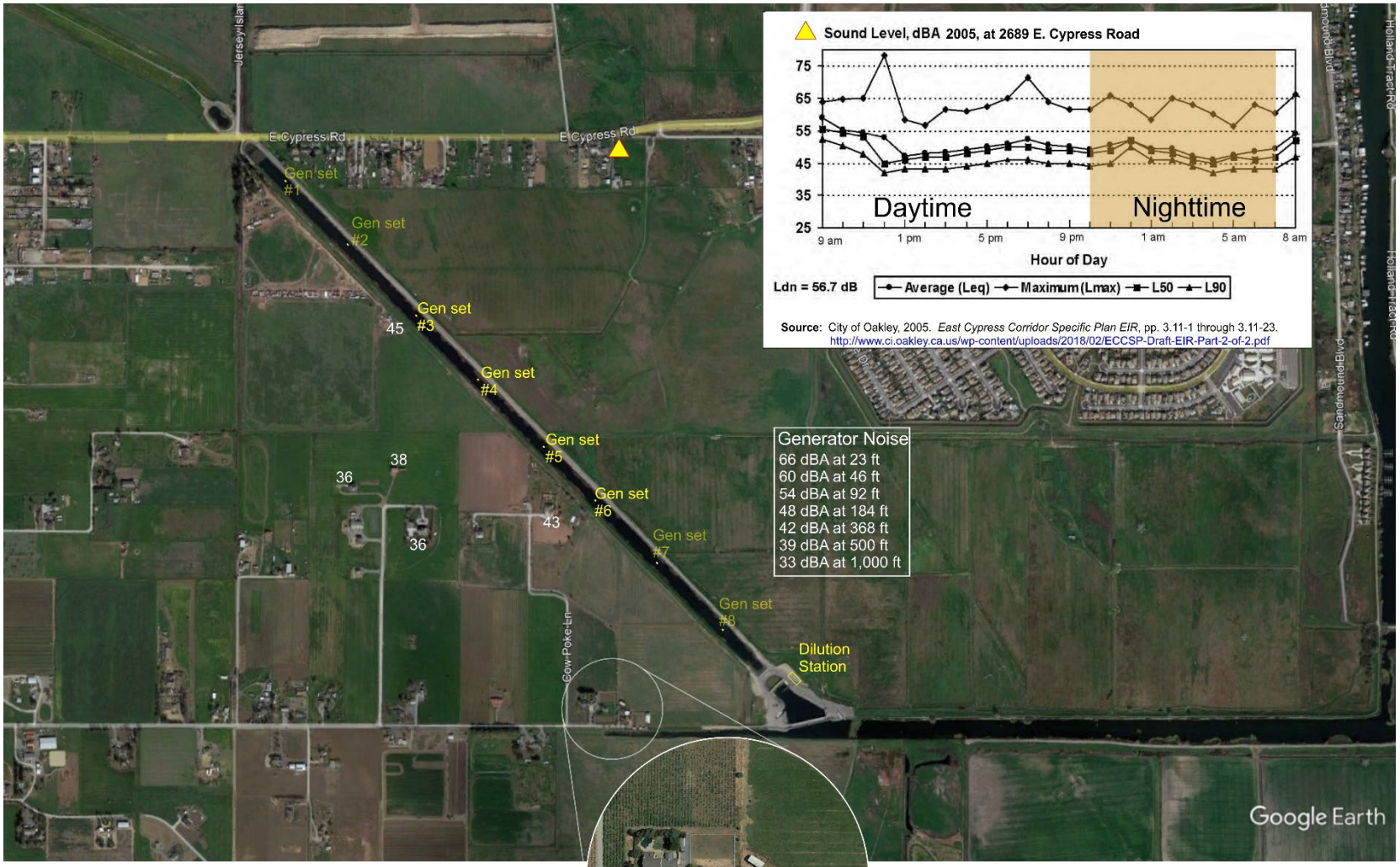
## Impacts

Based upon the assessment of proposed construction equipment, active daytime construction, and passive nighttime operation of dewatering generators and pumps, the main noise issue is likely nighttime diesel-powered generator and diesel powered pump noise. Few daytime activities would exceed daytime ambient noise levels as prevail at the nearest sensitive receivers. Ground clearing, earthwork by scrapers, graders and excavators, and pipe laying with cranes could exceed the existing ambient noise levels for relatively short periods as construction would progress away from the affected receivers. However, nighttime noise from the generators was found to add up to +3 dBA to ambient noise at the nearest receivers. The relevance of this is that generator noise would persist over the months of construction, whereas daytime construction activities could have short-term effects at a fixed receiver location over several days.

**Nighttime Construction Noise** Mobile non-road equipment is not proposed to be used at night; however, the dewatering generators and Dilution Station diesel-powered pumps would operate 24/7. For the listed receivers, the maximum steady-state noise level from the generators is expected to be 43- 45 dBA at 418 Cow Poke Lane and is expected within a range 36-45 dBA at all receivers. Figure 5 illustrates nighttime noise levels with generators #3–#6 operating. Not more than four (4) dewatering generators would operate concurrently.

The maximum expected generator noise level (45 dbA) is similar to the ambient background nighttime L90 noise level in the area (42–47 dBA). Increases in nighttime L90 noise caused by dewatering generators are expected to be +3.5 dBA at 418 Cow Poke Lane and generally less than +2 dBA at other receivers.

Pure tone or high frequency noise from the generators is not expected. The most dominant frequency occurs at 62 Hz, which is the diesel engine firing frequency, and first harmonic occurs at 124 Hz




NOTES:
1. Portable generators will power electric submersible pumps needed to lower the local water table. No more than four (4) dewatering generators will operate at the same time.
2. Shown here as operating are dewatering generators #3–#6.
3. At the Dilution Station, one (1) generator and two (2) diesel-powered pumps will operate continuously during dewatering.

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**Figure 5**
**Generator Noise at Select Receivers**

## Table 6. Typical Construction Noise Levels

| Construction Phase | Outdoor Noise Level ($L_{eq}$) in dBA | | |
|---|---|---|---|
| | 50 feet from active equipment | 200-300 feet from active equipment | 600 feet from active equipment |
| Ground Clearing | 84 | 68-72 | 62 |
| Scrapers and graders | 80-92 | 64-80 | 58-70 |
| Excavators | 78-88 | 62-76 | 56-64 |
| Cranes | 75-87 | 59-75 | 53-65 |
| Compactors | 72-75 | 56-63 | 50-53 |
| Generators (unspecified diesel-powered) | 71-82 | 55-70 | 49-60 |
| Pumps (unspecified diesel-powered) | 69-71 | 53-59 | 47-49 |
| **SOURCE**: U.S. EPA, 1971 | | | |

(Boone, 2006). The noise level used for the estimates is the maximum generator noise level at full load, 66 dBA at 23 feet distance from the generator (MultiQuip, 2022).

In summary, at the listed receivers, dewatering generator nighttime noise would be perceptible or unnoticeable outdoors, depending on receiver. Indoors at nighttime, dewatering generator noise would be barely perceptible or unnoticeable even under summer open window conditions. Diesel-powered pump and generator noise from the Dilution Station noise potentially will be barely perceptible at the nearest residences located at 2650 and 2800 Tule Lane. These houses are located approximately 1,500 to 1,800 feet west of the Dilution Station site, which is on the east side of the canal on the north side of the Rock Slough Fish Screen afterbay. Cumulative noise from the Dilution Station and dewatering generators #6, #7 and #8 could be 40–41 dBA at 2650 and 2800 Tule Lane. This noise level is similar to the ambient background nighttime L90 noise level in the area. The increase is nighttime noise at 2650 and 2800 Tule Lane caused by diesel-powered pumps and generators is expected to be +2 or +2.5 dBA, depending on receiver, which is just barely perceptible.

**Daytime Construction Noise** Grading, trenching, backfilling and compacting are progressive daytime construction activities that would move along the canal. Maximum daytime construction noise (see Table 6) would be short-term, generally intermittent depending on the construction phase, and variable depending on receiver distance from the active equipment. The duration of potential daytime noise impact generally would be from one day to several days depending on activity.

If construction equipment were not properly muffled or shielded for noise control, construction-generated noise potentially could 1) create a substantial temporary increase in ambient noise levels in the project vicinity and/or 2) result in the exposure of persons to excessive noise, annoyance, and/or sleep disruption. Those susceptible to potential effects of construction noise include residents in the nearest housing adjacent to the project site.

## Mitigation Measures

As a result of temporary daytime construction noise and nighttime generator noise, this impact is considered potentially significant. By implementing Mitigation Measures N-1 through N-4, CCWD would reduce potential short-term construction noise impacts to less-than-significant effects.

> ***Mitigation Measure N-1: Equip Construction Equipment with Noise Controls and Maintain According to Manufacturers' Specifications.*** CCWD shall require construction contractors to ensure that, to the extent feasible, construction equipment is properly maintained and equipped with noise control devices, such as mufflers, in accordance with manufacturers' specifications.
>
> ***Mitigation Measure N-2: Limit Construction to Hours Permitted by Applicable Standards.*** CCWD shall require construction contractors to limit construction activities to the hours of 7:30 a.m. to 7:00 p.m. Monday through Friday, and 9:00 a.m. to 7:00 p.m. Saturday and Sunday during which such activities are exempt from noise levels identified in applicable standards. To the extent that contractors work outside of these hours, noise levels will be limited so as not to cause any disruption to nearby residences (see Mitigation Measure N-4 below).
>
> ***Mitigation Measure N-3: Designate a Disturbance Coordinator for Noise Complaints.*** CCWD shall designate a disturbance coordinator during construction. The disturbance coordinator's telephone number shall be conspicuously posted around the project site and supplied to nearby rural and developing, occupied residences. The disturbance coordinator shall receive all public complaints and be responsible for determining the cause of the complaint and implementing any feasible measures to alleviate the problem.
>
> ***Mitigation Measure N-4: Shield Diesel-Powered Pumps at the Dilution Station.*** CCWD shall require a combination of equipment siting and noise shielding in the form of manufactured equipment enclosures or temporary constructed shielding around the Dilution Station generators and pumps. To reduce projected noise level to a design level of 45 dBA ($L_{eq}$) at the nearest houses, pumps will be placed behind a barrier shield constructed of suitable materials. The design level is intended to hold the maximum change in nighttime noise to +3 dBA or less. Preferred Dilution Station siting is illustrated in Figure 4. This siting is intended to avoid potential impact upon nesting swallows.

## 3.4 HAZARDS & HAZARDOUS MATERIALS

The 2006 MND discusses the regulatory environment associated with hazardous materials. Diesel-powered generators and Dilution Station pumps will be used during construction of Segment 5B. Generators and pumps have integral fuel tanks typically 80-250 gallons in size and would be installed with auxiliary fuel storage tanks within containment berms. All piping between the generators and fuel totes will have secondary containment. The District will prepare a Spill Prevention, Control and Countermeasures Plan (SPCC Plan) to meet United States Bureau of Reclamation requirements.

The nearest fire station is East Contra Costa County Fire Protection District (ECCCFPD) Station #93, which is located at 530 O'Hara Avenue in Oakley. Driving distance to the project site on O'Hara Avenue and East Cypress Road is 3–3.5 miles.

### Regulatory Setting

U.S. Bureau of Reclamation's responsibilities under the Oil Pollution Act of 1990, U.S EPA's Spill Prevention, Control, and Countermeasure Regulation (40 CFR 112)[6], and Clean Water Act are addressed with the development and implementation of appropriate SPCC Plans. SPCC Plans are required for Reclamation facilities under the U.S. 40 CFR 112, where oil or hazardous substances may be released into the waters of the United States. Reclamation's policy requires SPCC Plans from all construction contractors where a potential exists for release of petroleum or hazardous materials into the waters of the United States.

For temporary construction installations, SPCC Plans are required to be in place before construction. SPCC Plans are required for all facilities having above-ground storage that exceeds 660 gallons capacity in a single container or 1,320 gallons in aggregate in multiple containers. At any facility which, due to location, spilled oil could reasonably be expected to reach waters of the United States, an SPCC plan certified by a registered professional engineer is required.

Steel Tank Institute's (STI's) Standard SP001 is an industry standard which addresses specific conditions under which visual inspection alone serves as a regulatory-compliant method for verifying the integrity of shop-built containers. Shop-built portable containers include welded steel containers such as 55-gallon drums and totes. The specific conditions in STI SP001 include container type, size, and configuration, such as whether the container is in contact with the ground or has appropriate secondary containment. According to STI Standard SP001, when portable containers have adequate secondary containment then visual inspection of these containers satisfies integrity testing requirements of the regulation.

In California, above ground storage of petroleum has been regulated under the Above ground Petroleum Storage Act (APSA) since January 1, 2008. APSA requirements are enforced by the Contra Costa County Health Services Unified Program Agency (UPA). Applicability depends on location and aggregate storage volume. Unless exempted, a facility in the APSA Program must:

- Prepare and implement an SPCC Plan;
- Submit facility information in the California Environmental Reporting System (DERS); and,
- Pay a fee to the County UPA.

[6] Originally published in 1973 under the authority of the Clean Water Act, Section 311(j)(1)(C), as amended by the Oil Pollution Act of 1990, the Spill Prevention, Control and Countermeasures Regulation (or "Oil Pollution Prevention Regulation") is codified in 40 CFR 112.

An SPCC Plan will be prepared in any event as it is a federal requirement routinely implemented on all USBR properties.

## Impacts

The proposed on-site diesel supply would be stored in above-ground totes such as Western Global TRANSCUBE™ Model 10TCG totes or other equivalent Intermediate Bulk Containers (IBCs). TRANSCUBE™ Model 10TCG is a double-walled, 110% containment, stackable, fuel storage container. Fuel totes, generators and diesel-powered Dilution Station pumps will be installed over lined containment basins or pre-fabricated cubes.

Pre-fabricated 12-foot × 12-foot "cubes" are manufactured by PacTec, Inc. Alternatively, basins will be formed using InstaBerm brackets and lined with PacTec X-Guard 30-mil liner or equivalent.

Proposed diesel powered generators and pumps will have integral fuel storage with built-in welded steel secondary containment. For example, MultiQuip WhisperWatt™ generators have integral 80-gallon fuel tanks for 24-hour operation between refueling events. Dilution Station pumps #1 and #2 will have larger integral fuel tanks. Generators and fuel tanks will have triple containment with double-containment integral in the equipment and, in addition, spill containment placed under the units.[7]

Fuel piping from the storage totes to the generators and dilution pumps will be directly plumbed and installed over in berms lined with PacTec X-Guard or equivalent. Refueling, therefore, will not entail manual transfer using hoses.

Steel Tank Institute's (STI's) Standard SP001 is an industry standard which addresses specific conditions under which visual inspection alone serves as an SPCC Regulation-compliant method for verifying the integrity of shop-built containers. According to STI Standard SP001, in view of the fact that the proposed totes have built-in secondary containment, visual inspection of these containers is acceptable and will satisfy the integrity testing requirements of the rule.

## Mitigation Measures

***Mitigation Measure HAZ-1: Prepare and Implement an SPCC as Required by Reclamation.*** CCWD shall prepare and submit an SPCC Plan for fuel storage and portable diesel-powered equipment and other non-road equipment.

[7] WhisperWatt™ Model DCA45SSIU4F generators have built-in containment is adequate to capture 119% of spilled engine fluids rather than just the diesel fuel in the 80-gallon polypropylene tank (MultiQuip, 2023).

# SECTION 4
# CONCLUSION

Project changes are proposed to accommodate construction dewatering using diesel-powered generators rather than electricity from the power grid. The changes evaluated include the generators and dilution pumps, their noise levels and characteristics, and diesel fuel handling and storage. Subject to proposed mitigation measures, proposed project changes would not cause or contribute to significant air quality, noise, upset conditions or hazardous materials impacts.

New significant environmental effects or a substantial increase in the severity of previously identified significant effects are not expected to result from the proposed use of portable diesel-powered equipment. Therefore, submittal of Addendum No. 7 meets the requirements of CEQA Guidelines (Sections 15162 and 15164) without the need to re-circulate a subsequent EIR or a subsequent Negative Declaration.

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