

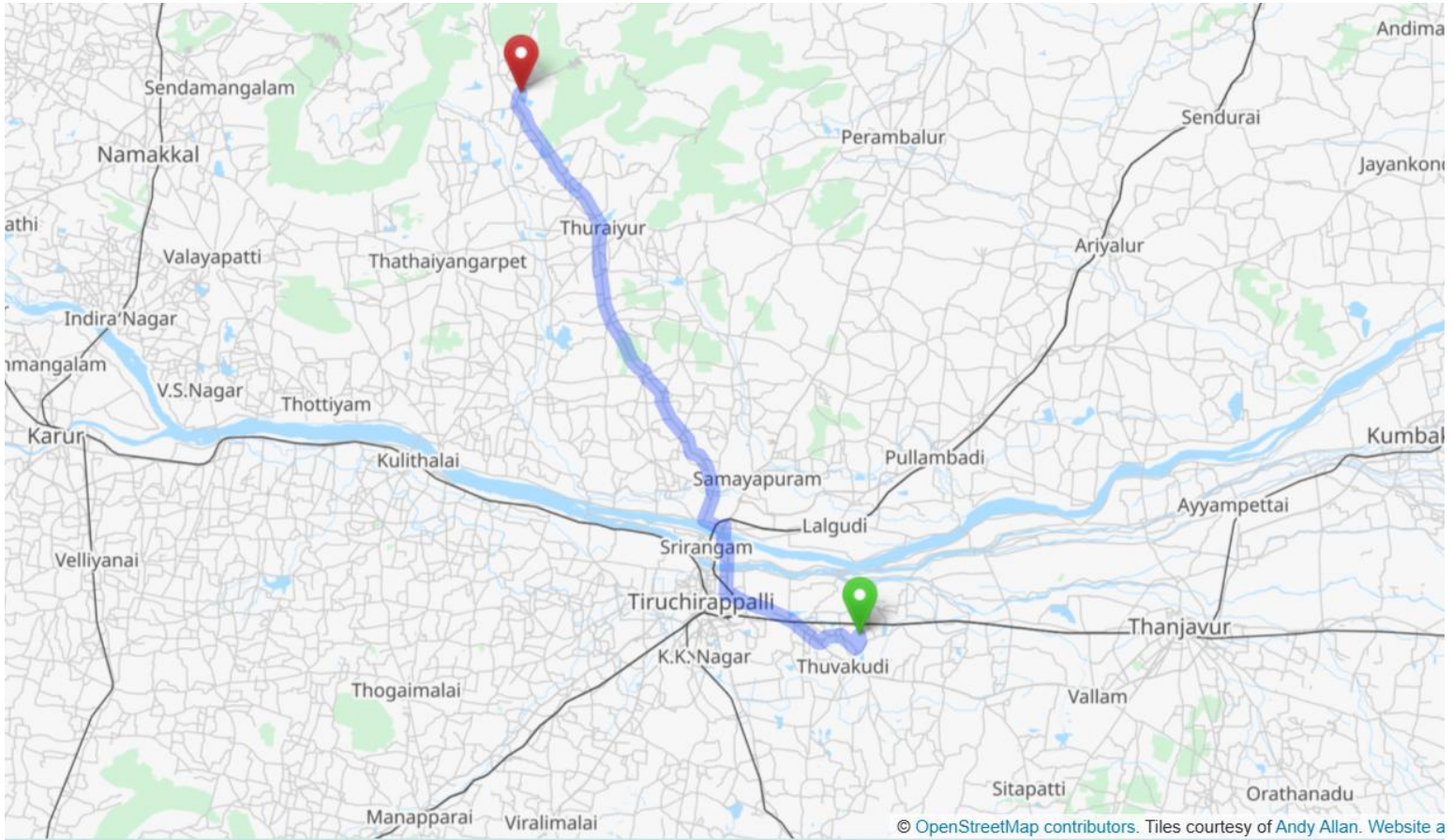


IndianOil

WELCOME TO JOURNEY
RISK MANAGEMENT (JRM)
STUDY USING ARTIFICIAL
INTELLIGENCE (AI)
FOR IOCL TRICHY
TERMINAL

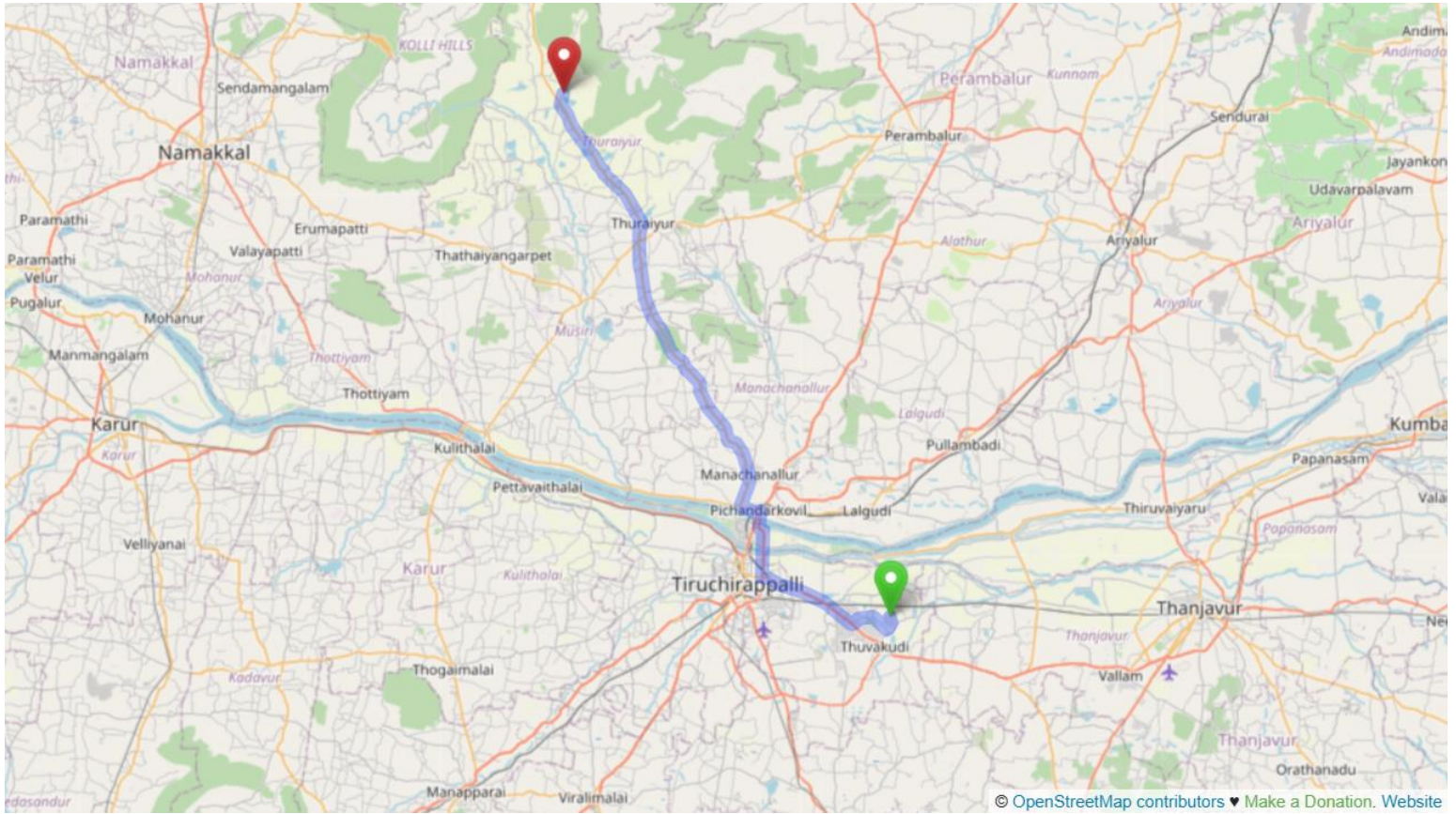
JOURNEY RISK MANAGEMENT REPORT

IOCL TIRCHY TERMINAL (10.7753, 78.8368) TO VSK FUELS
(11.2755436 , 78.5185281) TOTAL DISTANCE – 78.8 KM



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Welcome to the Journey Risk Management Study for VSK FUELS

Total distance: 78.8 KM; Start with: (10.7753 , 78.8368), End with: (11.2755436 , 78.5185281)

❖ Route Safety Analysis Report

1. Overview of the Route Map

The route from Trichy Terminal (T.N) To VSK FUELS .The Route passes Through Several key Point Including Take SIDCO to Indian oil Storage to NH 83 in Thuvakudi, At Jude Digital Studios, continue onto Thuvakudi to SIDCO& Indian oil Storage, Continue on NH 83. Take NH38 to Thuraiyur Main Rd/Thuraiyur - Tiruchirappalli Main Rd/Vadakkadu - Alangudi Rd and Total distance from Trichy Terminal To VSK FUELS 78.8 KM.

Typical Weather Conditions and Potential Weather-Related Hazards

Weather Conditions:

Trichy Terminal (T.N) To VSK FUELSexperiences a tropical climate with heavy monsoon rains from June to September, high humidity, and moderate temperatures throughout the year ,The summers are short and sweltering; the winters are short, cool, and dry; and it is mostly clear year-round. Over the course of the year, the temperature typically varies from 60.8°F to 110°F and is rarely below 60.8°F to 110°F.

JOURNEY RISK MANAGEMENT REPORT

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Nov	Oct	Dec	Year
Record high °C (°F)	33.0 (91.4)	38.0 (100.4)	41.0 (105.8)	43.0 (109.4)	43.0 (109.4)	42.0 (107.6)	40.0 (104.0)	39.0 (102.2)	38.0 (100.4)	37.0 (98.6)	34.0 (93.2)	33.0 (91.4)	43.0 (109.4)
Average high °C (°F)	30.27 (86.49)	32.88 (91.18)	36.0 (96.8)	38.27 (100.89)	38.79 (101.82)	36.78 (98.2)	36.17 (97.11)	35.4 (95.72)	35.03 (95.05)	32.9 (91.22)	30.38 (86.68)	29.34 (84.81)	34.35 (93.83)
Daily mean °C (°F)	26.57 (79.83)	28.67 (83.61)	31.87 (89.37)	34.46 (94.03)	35.18 (95.32)	33.45 (92.21)	32.92 (91.26)	32.18 (89.92)	31.78 (89.2)	29.86 (85.75)	27.44 (81.39)	26.32 (79.38)	30.89 (87.6)
Average low °C (°F)	19.88 (67.78)	20.93 (69.67)	24.04 (75.27)	27.62 (81.72)	28.89 (84.0)	27.59 (81.66)	27.04 (80.67)	26.45 (79.61)	25.95 (78.71)	24.64 (76.35)	22.43 (72.37)	20.93 (69.67)	24.7 (76.46)
Record low °C (°F)	16.0 (60.8)	17.0 (62.6)	19.0 (66.2)	22.0 (71.6)	25.0 (77.0)	25.0 (77.0)	24.0 (75.2)	23.0 (73.4)	22.0 (71.6)	21.0 (69.8)	18.0 (64.4)	17.0 (62.6)	16.0 (60.8)
Average precipitation mm (inches)	12.32 (0.49)	20.82 (0.82)	26.34 (1.04)	57.63 (2.27)	102.32 (4.03)	61.68 (2.43)	63.88 (2.51)	124.75 (4.91)	141.74 (5.58)	231.04 (9.1)	159.62 (6.28)	71.08 (2.8)	89.44 (3.52)
Average precipitation days (≥ 1.0 mm)	3.09	3.27	5.36	7.36	16.73	12.36	13.55	18.91	19.64	22.73	17.55	9.73	12.52
Average relative humidity (%)	72.01	65.19	58.27	53.97	51.56	50.59	51.14	56.11	60.33	70.18	77.39	76.61	61.95
Mean monthly sunshine hours	11.19	11.34	11.34	11.63	12.65	12.68	11.83	11.24	11.05	9.11	7.68	8.29	10.84

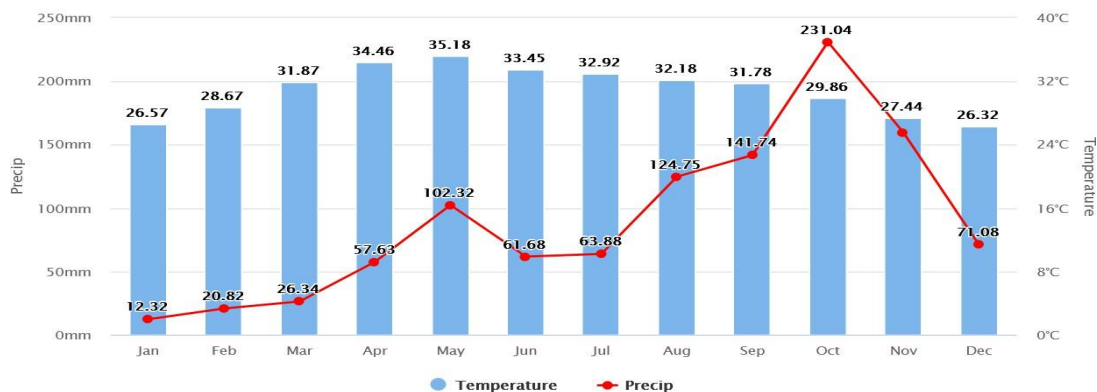
Weather-Related Hazards:

Trichy Terminal (T.N) To VSK FUELS Providing a local hourly weather forecast of rain, sun, wind, humidity and temperature.

The Long-range 12 day forecast also includes detail for weather today. Live weather reports from Trichy Terminal (T.N) To VSK FUELS weather stations and weather warnings that include risk of thunder, high UV index and forecast gales.

Climate Graph

The chart below shows the mean monthly temperature and precipitation of Tiruchirappalli in recent years.



Analysis of Traffic Patterns

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Peak Hours:

Typically, Trichy Terminal (T.N) To VSK FUEL Speak traffic hours are from 8:00 AM to 11:00 AM and 4:00 PM to 8:00 PM on weekdays.

Congestion-Prone Areas:

- Malar Mahal
- Handy Man Services
- TNSTC TRICHY RE CONDITIONING UNIT
- Asswin Battery House
- Old Palpannai Bus Stop
- Government Hospital
- Petrol Station

❖ Assessment of Road Quality and Infrastructure

Road Quality: Generally, the roads are well-maintained but can suffer from potholes and waterlogging on State Highway during the monsoon season.

Infrastructure: Adequate signage, street lighting, and traffic signals are present, but some areas may lack proper drainage systems, leading to waterlogging.

❖ Suggestions for Alternative Routes for Emergencies

Alternative Route 1- The route from Trichy Terminal (T.N). Take SIDCO to Indian oil Storage to NH 83 in Thuvakudi, At Jude Digital Studios, continue onto Thuvakudi to SIDCO& Indian oil Storage, Continue on NH 83. Take NH 38 to Thuraiyur Main Rd/Thuraiyur - Tiruchirappalli Main Rd/Vadakkadu - Alangudi Rd and Total distance from Trichy Terminal To VSK FUELS 78.8 KM.

Alternative Route 2- The route from Trichy Terminal (T.N). Take SIDCO to Indian oil Storage to NH 83 in Thuvakudi, At Jude Digital Studios, continue onto Thuvakudi to SIDCO& Indian oil Storage, Continue on NH 83. Take NH

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38 to Thuraiyur Main Rd/Thuraiyur - Tiruchirappalli Main Rd/Vadakkadu - Alangudi Rd

and Total distance from Trichy Terminal to VSK FUELS IS 78.8 KM.

Summary of Local Regulations Affecting Hazardous Material Transport

Regulations: Transport of hazardous materials is regulated by the Petroleum and Explosives Safety Organization (PESO) and the Motor Vehicles Act. Specific routes and timings may be restricted for hazardous material transport.

Permits: Ensure all necessary permits and documentation are in place.

❖ Overview of Historical Incidents

Historical Incidents: There have been occasional incidents involving heavy vehicles, particularly during the monsoon season due to waterlogging and poor visibility. No major incidents involving hazardous materials have been reported recently.

❖ Environmental Considerations and Sensitive Areas

- **Sensitive Areas:** Malar Mahal, Handy Man Services, TNSTC TRICHY RE CONDITIONING UNIT, Asswin Battery House, Old Palpannai Bus Stop, Government Hospital, Petrol Station
- **Educational institutions:** State Institute Of Hotel Management and Catering Technology, National Institute of Technology Tiruchirappalli, AGN InfoSystems & AGN INFOTECH, NIT Trichy.
- **Hospital:** - Dr Kamali's Home Clinic, Muthammal Medical Foundation Hospital, Times Hospital - (Trichy Institute of Medical and Educational Services), Apollo Speciality Hospitals – Trichy. GVN Hospital (P) Ltd. - Multispecialty Hospital Trichy.
- **Gas Station:** IndianOil, Bharat Petroleum - Sri Vela Fuels, IndianOil, Reliance Petrol Bunk.
- **Environmental Impact:** Minimize noise and air pollution, especially in residential and sensitive areas.
- **Air pollution:** Volatile chemicals evaporate during the filling and discharge process, or from leaks.
- **Loss of habitats:** Oil and gas operations can degrade animal habitats and disrupt migratory pathways.

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- **Oil spills:** Oil spills can be devastating for animals and humans.
- **Greenhouse gas emissions:** Oil and gas operations can emit greenhouse gases like methane.
- **Analysis of Communication Coverage**

Communication Coverage: Generally good throughout the route, but potential dead zones may exist densely built-up areas or underpasses.

Dead Zones: Monitor for any communication blackouts, especially in underpasses or near large buildings.

- **Estimated Emergency Response Times-** Malar MahaHandy Man Services, TNSC TRICHY RE CONDITIONING UNIT, Asswin Battery House, Old Palpannai Bus Stop, Government Hospital, Petrol Station, areas like have quicker response times (15- 20 minutes). Congested areas may experience delays (up to 30-40 minutes).

- **Overall Summary of Risk Assessment**
- **Risk Level:** Moderate to High, especially during monsoon season.
- **Key Risks:** Waterlogging, traffic congestion, and potential communication dead zones.
- **Mitigation Measures:** Plan travel during non-peak hours, ensure proper vehicle maintenance, and have alternative routes and emergency contacts ready and control on the speed limit of the vehicle.
- **Road Signage for TT/PT Driver**











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Road Traffic Signs in India

Mandatory/Regulatory Signs

















 Stop	 Give way	 No entry	 Straight prohibited
 One way	 One way	 Vehicles prohibited in both directions	 Horn prohibited
 Pedestrians prohibited	 Cycles prohibited	 Right turn prohibited	 Left turn prohibited
 U-turn prohibited	 Overtaking prohibited	 Trucks prohibited	 Tonga prohibited

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 <p>All motor vehicles prohibited</p>	 <p>Hand cart prohibited</p>	 <p>Bullock cart prohibited</p>	 <p>Bullock and hand carts prohibited</p>
 <p>No parking</p>	 <p>No parking or stopping</p>	 <p>Speed limit</p>	 <p>Axle load limit</p>
 <p>Width limit</p>	 <p>Weight limit</p>	 <p>Length limit</p>	 <p>Load limit</p>
 <p>Restriction ands</p>			




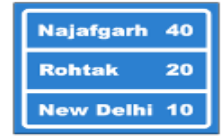
















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Cautionary signs

 <p>Right hand curve</p>	 <p>Left hand curve</p>	 <p>Right hand pin bend</p>	 <p>Left hand pin bend</p>
 <p>Right reverse bend</p>	 <p>Narrow bridge</p>	 <p>Gap in median</p>	 <p>Cycle crossing</p>
 <p>Pedestrian crossing</p>	 <p>School</p>	 <p>Men at work</p>	 <p>Roundabout</p>
 <p>Narrow road</p>	 <p>Road widens</p>	 <p>Side road left</p>	 <p>Side road right</p>

JOURNEY RISK MANAGEMENT REPORT

Information signs

			
Advance direction	Map type advance direction	Rotary intersection	Reassurance
			
Direction	Direction	Place identification	Truck lay bay
			
Toll booth ahead	Parking this side	Parking both sides	Cycle stand
			
Scooter and motor cycle stand	Taxi stand	Auto-rickshaw stand	Cycle-rickshaw stand
			
Public telephone	Filling station	Hospital	First aid post

Conclusion

The route for Trichy Terminal (T.N) To VSK FUELS is generally manageable but poses several risks, particularly during the monsoon season. Proper planning, adherence to regulations, and awareness of potential hazards can significantly mitigate these risks.

JOURNEY RISK MANAGEMENT REPORT

- **Risk Assessment - Sharp Turns**

Risk Type	Risk Level	Coordination	Distance From Start	Recommendation Speed
Sharp turn	Medium	10.7695173754.174736, 78.83735063199906	650 M	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.76584461192607, 78.8361700257199	1.1 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.764182189802032, 78.83459588401435	1.3 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.75826698538096, 78.83349398474651	2 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.756372549032195, 78.83034570133539	2.4 KM	20km/hr TO 30 Km/Hr
Sharp turn	High	10.751346435623256, 78.8252297405902	3.2 KM	10km/hr TO 15 Km/Hr
Sharp turn	High	10.757906942798716, 78.81117677157785	6.2 KM	10km/hr TO 15 Km/Hr
Sharp turn	Medium	10.787358384509025, 78.77401388280337	10.8 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.807926793454792, 78.72541718894573	16.7 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.812858780584483, 78.71601872869049	17.8 KM	20km/hr TO 30 Km/Hr
Sharp turn	High	10.813153854161522, 78.7123280092307	18.2 KM	10km/hr TO 15 Km/Hr
Sharp turn	High	10.8132381608445, 78.71189885580515	18.3 KM	10km/hr TO 15 Km/Hr
Sharp turn	Medium	10.817664228587676, 78.7119846864179	18.8 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.825209469597384, 78.7154.11383982665	19.6 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.844809252744147, 78.71308566683136	21.8 KM	20km/hr TO 30 Km/Hr

JOURNEY RISK MANAGEMENT REPORT

Sharp turn	High	10.848867431944997, 78.71317588521788	22.2 KM	10km/hr TO 15 Km/Hr
Sharp turn	High	10.848867431944997, 78.71346458407959	22.3 KM	10km/hr TO 15 Km/Hr
Sharp turn	Medium	10.843905458719005, 78.71344654040074	22.8 KM	20km/hr TO 30 Km/Hr
Sharp turn	High	10.841388997909634, 78.71341045302391	23.1 KM	10km/hr TO 15 Km/Hr
Sharp turn	High	10.841176338285557, 78.71582830599077	23.4 KM	10km/hr TO 15 Km/Hr
Sharp turn	Medium	10.841956089501496, 78.71830028999419	23.7 KM	20km/hr TO 30 Km/Hr
Sharp turn	High	10.841353554649443, 78.72054.1900731076	23.9 KM	10km/hr TO 15 Km/Hr
Sharp turn	High	10.923762843001246, 78.73680864147859	31.4 KM	20km/hr TO 30 Km/Hr
Sharp turn	High	10.969669140000148, 78.73432189585048	36.9 KM	20km/hr TO 30 Km/Hr
Sharp turn	High	10.987171788079136, 78.73507105073543	38.8 KM	20km/hr TO 30 Km/Hr
Sharp turn	High	10.992556471613726, 78.73420495410657	39.7 KM	20km/hr TO 30 Km/Hr
Sharp turn	High	11.00672622162037, 78.73218406197262	41.5 KM	20km/hr TO 30 Km/Hr
Sharp turn	High	11.041297550454644, 78.7281422777306	45.6 KM	20km/hr TO 30 Km/Hr
Sharp turn	High	11.045831193489123, 78.72843097660689	46.2 KM	20km/hr TO 30 Km/Hr
Sharp turn	High	11.049939747002249, 78.72958577211202	48.5 KM	20km/hr TO 30 Km/Hr
Sharp turn	High	11.096486738100735, 78.7554115563951	52.6 KM	20km/hr TO 30 Km/Hr
Sharp turn	High	11.100298348526637, 78.75577570517034	53.1 KM	20km/hr TO 30 Km/Hr
Sharp turn	High	11.099941012162306, 78.75832474659693	53.8 KM	20km/hr TO 30 Km/Hr

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		11.115681269949214, 78.59361330154856	57.4 KM	
Sharp turn	High	11.149832333497306, 78.5948381469335	61.3 KM	10km/hr TO 15 Km/Hr
Sharp turn	High	11.153523944186071, 78.59289417636298	62 KM	10km/hr TO 15 Km/Hr
Sharp turn	Medium	11.179375125883189, 78.57778797516758	65.3 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	11.194025912616736, 78.56139431374432	67.8 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	11.200424874120278, 78.55753193291432	68.6 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	11.200803755562099, 78.55710277948877	68.7 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	11.244583259444797, 78.52632172452572	74.6 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	11.256957903400874, 78.52078564491372	76.1 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	11.25981439166367, 78.51887257958394	76.5 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	11.26646933692928, 78.51480275243544	77.3 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	11.275225784349667, 78.51759444121022	78.4 KM	20km/hr TO 30 Km/Hr

**IOCL TIRCHY TERMINAL (10.7753, 78.8368) TO VSK
FUELS(11.2755436 , 78.5185281) TOTAL DISTANCE – 78.8 KM**

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JOURNEY RISK MANAGEMENT REPORT



IMAGE :- SHARP TURN RISK LEVEL :- MEDIUM COORDI: 10.769073692604486, 78.83720120889187



IMAGE :- SHARP TURN RISK LEVEL :- MEDIUM COORDI: 10.76411343953054.19, 78.83446118711721

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JOURNEY RISK MANAGEMENT REPORT



**IMAGE :- SHARP TURN RISK LEVEL :- MEDIUM COORDI:
10.758209570013967, 78.83344387884853**



**IMAGE :- SHARP TURN RISK LEVEL :- MEDIUM COORDI:
10.751314343654.1747, 78.82530656733346**

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JOURNEY RISK MANAGEMENT REPORT



IMAGE :- SHARP TURN RISK LEVEL :- MEDIUM COORDI: 10.75126610223314, 78.82518044583597



IMAGE :- SHARP TURN RISK LEVEL :- MEDIUM COORDI: 10.759296455409434, 78.8095474954.15673

ALARP/JRM/TNSO/VSK FUELS

JOURNEY RISK MANAGEMENT REPORT



**IMAGE :- SHARP TURN RISK LEVEL :- MEDIUM COORDI:
10.787270680907813, 78.77433315009567**



**IMAGE :- SHARP TURN RISK LEVEL :- MEDIUM COORDI:
10.801869769228155, 78.74289067038384**

ALARP/JRM/TNSO/VSK FUELS

JOURNEY RISK MANAGEMENT REPORT



**IMAGE :- SHARP TURN RISK LEVEL :- MEDIUM COORDI:
10.807212761783093, 78.727384388977**

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JOURNEY RISK MANAGEMENT REPORT



**IMAGE :- SHARP TURN RISK LEVEL :- MEDIUM COORDI:
10.813070768754649, 78.71358087620345**



**IMAGE :- SHARP TURN RISK LEVEL :- MEDIUM COORDI:
10.813158210442325, 78.7154.1472790252**

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JOURNEY RISK MANAGEMENT REPORT



**IMAGE :- SHARP TURN RISK LEVEL :- MEDIUM COORDI:
10.817454621921845, 78.71214828336923**



10.829944696187399, 78.71262765817357

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JOURNEY RISK MANAGEMENT REPORT



**IMAGE :- SHARP TURN RISK LEVEL :- MEDIUM COORDI:
10.8343154.187172522, 78.71279030656987**



ALARP/JRM/TNSO/DEVARAJAN

JOURNEY RISK MANAGEMENT REPORT



**IMAGE :- SHARP TURN RISK LEVEL :- MEDIUM COORDI:
10.844717051819696, 78.71311369720765**



**IMAGE :- SHARP TURN RISK LEVEL :- MEDIUM COORDI: 10.844989438989616,
78.71307770835966**

ALARP/JRM/TNSO/DEVARAJAN

JOURNEY RISK MANAGEMENT REPORT



IMAGE :- SHARP TURN RISK LEVEL :- MEDIUM COORDI: 11.095169847505668, 78.75611253202945



IMAGE :- SHARP TURN RISK LEVEL :- MEDIUM COORDI: 11.099913561421037, 78.75809608661672

ALARP/JRM/TNSO/DEVARAJAN

JOURNEY RISK MANAGEMENT REPORT



**IMAGE :- SHARP TURN RISK LEVEL :- MEDIUM COORDI: 11.132951013858628,
78.7738626402601**

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JOURNEY RISK MANAGEMENT REPORT



**IMAGE :- SHARP TURN RISK LEVEL :- MEDIUM COORDI: 10.9430633537737,
78.68004940310507**

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JOURNEY RISK MANAGEMENT REPORT



**IMAGE :- SHARP TURN RISK LEVEL :- MEDIUM COORDI: 11.148785828442637,
78.59470029872489**

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JOURNEY RISK MANAGEMENT REPORT



**IMAGE :- SHARP TURN RISK LEVEL :- MEDIUM COORDI: 11.264701417687565,
78.51645199701515**

ALARP/JRM/TNSO/DEVARAJAN

JOURNEY RISK MANAGEMENT REPORT



**IMAGE :- SHARP TURN RISK LEVEL :- MEDIUM COORDI: 11.275639690101226,
78.51842109700691**

ALARP/JRM/TNSO/DEVARAJAN